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A Guide for Diabetics

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PREFACE

SUCCESSFUL treatment of diabetes mellitus is dependent upon the co-operation of the patient and his physician. Owing to the nature of the disease, the physician's first problem is one of conducting an investigation to find out the tolerance of the patient for food along certain recognized lines; then to establish the conditions which will conserve, improve, or supplement that tolerance and continuously to supervise and direct the efforts of the patient to obtain a maximal alleviation of his condition. The introduction of insulin, while of great value in itself, has served to make more plain the necessity of accurate dietetic treatment of diabetes.

The purpose of the Guide is to explain to the patient certain facts about diabetes and its dietetic control, which are essential foundations for his intelligent co-operation with his physician, and also to provide him with a number of tested recipes for suitable foods. Part of the book is devoted to the actual construction of menus for the diabetic from a dietetic prescription, a point omitted from most of the larger works, or left entirely to the intuition of the patient. Since it is desirable that the patient actually work out his own diet in order that he may have a thorough understanding of the principles involved, we have purposely omitted the usual list of stock diets which burden most texts. It will be noted that a blank page is interleaved with each printed page. This is for the patient's use in recording his questions and the answers thereto. It may also be used for preserving additional recipes which have been approved by the physician or dietitian for the patient's use. The Guide represents material long used in mimeographed form for the instruction of our patients. It is hoped that its collection in the present form

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will be of use to other patients co-operating with their physicians.

In the preparation of special diets for patients in hospital we have been particularly impressed with the necessity of carefully avoiding monotonous repetition of the same foods from day to day, both from the standpoint of the patient's feeling of well-being and his training in the dietetics of his disease. For the food-stuffs in the original menu, tables of equivalents have been arranged using foods containing approximately the same food value as the original food for which they may be substituted, thus providing a wide variety of choice for the patient. These tables have materially decreased and simplified the work of the dietitian in charge of menus. The information collected in the Guide has also proved useful in the training of student and junior dietitians in the rapid and accurate construction and alteration of menus, and while it is true that the information is assembled primarily from the standpoint of providing a training for diabetics, the principles can be adapted to the preparation of diets required by other classes of patients.

We wish to thank Professor Duncan Graham and Dr. Almon Fletcher for much kindly criticism and helpful advice during its preparation for publication. We also appreciate the kindness of the Editor, The Canadian Medical Association Journal, in permitting us to reprint certain Tables which have appeared in the Journal.

W. R. C.
M. T. P.

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CHAPTER I

THE NATURE AND CAUSE OF DIABETES—OBJECTS OF TREATMENT

It is now established that diabetes is, to a very large extent, caused by deficiency of a secretion produced by the pancreas, a small organ in the upper part of the abdomen. It produces two secretions; one of which passes through a tube or duct into the small bowel; the other secretion is absorbed directly into the blood stream. This latter secretion comes from a special part of the pancreas—the islet cells—and to it the name "insulin" has been given. The purpose of insulin is to make available for the body the energy in foods, particularly sugars and starches. In a healthy individual the ability of the pancreas to produce insulin is far greater than the possible demand for the substance in the body. When disease attacks the pancreas injuring the islet cells, less and less insulin is produced, depending on the severity of the injury. As a result, the sugars absorbed from food are not utilized but increase in the blood, and having attained a level considerably above the normal blood sugar level, glycosuria or excretion of sugar in the urine appears, accompanied, as a rule, by other symptoms, such as hunger, thirst, and loss of weight. With more severe degrees of damage to the insulin-producing mechanism the fats, which are dependent upon the carbohydrates for their utilization, are no longer completely used, but leave behind poisonous substances: acetone, acetoacetic acid, and β-oxybutyric acid. When these substances accumulate in the body diabetic acidosis and diabetic coma are produced. Prior to the discovery of insulin two-thirds of all diabetic patients died in coma.

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The actual cause of the loss of power of the pancreas to produce insulin is often very difficult to determine. Factors which seem to have an important bearing are: heredity, infection, and the bodily changes associated with old age, with overeating and obesity possibly playing a less important rôle. In some patients there is an hereditary or familial history of the disease, or the patient may be born with a pancreas lacking the potentialities of normal growth, and so wear out early. Probably by far the majority of patients have suffered from some infection of the pancreas at some previous time, resulting in the loss or destruction of the essential islet cells. In a certain number of older people, through the gradual development of disease of the blood vessels and consequent malnutrition of all organs of the body, diabetes results. While obesity is probably not solely responsible, a surprisingly large percentage of patients have been markedly overweight at the onset of the diabetes. In these cases overliberal diet, causing overwork to the pancreas, probably leads to damage of the islet cells and deficient production of insulin.

The object of treatment is, where possible, to remove the cause, infections, overeating, etc., and to conserve, or to improve the existing power of the pancreas to produce insulin, by prescribing for the patient a proper diet, with insulin where necessary.

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CHAPTER II

FOOD PRINCIPLES AND THE USE OF FOOD

A suitable diet is the foundation stone of any treatment of diabetes. With the single exception of insulin, the actual necessary substance which is deficient in this disease, drugs are absolutely valueless, however useful they may be in the treatment of its complications. As few, if any, sufferers from diabetes are ever completely cured, treatment must be continuous. In a hospital diabetic clinic the proper diet can be prescribed and adequately controlled. In order that the patient may later co-operate intelligently with his physician in carrying on dietetic treatment in his own home, it is necessary that he learn something of the nature of food materials, and their uses.

The food principles necessary for building the body and supplying it with energy may be divided into groups known as: Proteins, Fats, Carbohydrates, Water, Mineral Salts, and Vitamines. Of the latter two little more need be said, as, except in the diets of children, any reasonably well selected diet contains them in abundance. Water is a valuable and easily available constituent of the body and its liberal, not excessive, use is generally advisable.

The Proteins are a group of very complex substances of very great importance, since they form the muscles and other living tissues of the body. Proteins occur in considerable quantities in meat, fish, eggs, and milk, and in varying amounts in cereals, nuts, fruits and vegetables. Usually protein is accompanied by fats or carbohydrates, or both, and seldom appears in the pure form. As an example of a pure protein we may take the white of an egg. On heating this

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strongly we find that it sets, clots or coagulates. By keeping the egg warm for a period of three weeks we find it becoming a chick. The egg white has become flesh or meat. Meat or flesh also has the property of coagulating when cooked. Casein, a similar substance, occurring in milk, clots when the milk sours. These substances are used to build up the active organs of the body. Even under conditions of rest there is a certain amount of body protein destroyed every day, and this must be replaced if the person is to avoid losing strength. In health this can be done readily enough, but in diabetes excess food must be avoided, becauses it uses up the insulin and increases the work of the damaged pancreas. Two-thirds of a gram of protein for each kilogram of body weight is usually sufficient for this purpose; more may sometimes be used to make the diet more palatable, or for growth. Excess protein is destroyed to furnish heat or energy.

The Carbohydrates are a group of substances which are converted into sugar when digested. The commoner ones are: cane or beet sugar, honey, maple sugar or syrup, molasses, corn syrup or glucose, milk sugar or lactose, and the starches and dextrins present in cereals, roots, fruits and vegetables. These substances are used to provide energy or may be stored for future needs in the body, in the form of fat. The body possesses a very small store of carbohydrate in the blood, the liver, and the muscles, in the form of glycogen and glucose. The utilization in the body of the energy of the carbohydrates is dependent upon an adequate production of insulin by the pancreas.

The Fats are substances having in common a greasy property. Familiar examples are: butter, lard, olive oil, cottonseed oil, suet or tallow. Fat is present in considerable quantity in milk, cream, cheese, meats, fish, nuts, and, in

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lesser amounts, in some other foods as well. It forms a rather slowly available but very concentrated source of energy.

Very great inequality in the amounts of the different food principles must be avoided for two reasons: first, such diets become monotonous and unpalatable; and second, there is the possibility of the production of the acetone bodies. Normally the fat is burned to carbon dioxide and water, but when the carbohydrate is insufficient the mixture "smokes", as it were, and produces acetone bodies (acetone, acetoacetic acid and β-oxybutyric acid). In this sense glucose acts as kindling for green wood, and it is sometimes said that "fat burns in the flame of the carbohydrate". Care must be taken, however, lest the proportion of fat becomes too great. The presence of a small amount of acetone bodies in the urine does no great harm, because there are numerous compensating factors. Nevertheless, it is undesirable to have too much produced, since the acetone bodies then produce poisonous effects and, if very excessive, cause diabetic coma.

The use of food

The locomotive standing in the round house must get up steam before it can be put to work. For this purpose coal is burned and heat liberated to produce steam in the boiler. This puts it in a condition to move, but more steam must be produced to keep it moving. The human body, a more delicate engine, requires at all times a certain amount of energy to keep it warm and ready to do work. Here, also, additional calories of heat, or units of energy, are required when work is actually performed.

The amount of energy required to live varies with the age and size of the individual. The adult at rest requires about one calorie per hour for each kilogram of weight. For a man weighing 150 pounds this would amount to approximately

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1600 calories per day. The additional energy required to carry on work varies widely according to the type of occupation in which he is engaged. In the sedentary occupations no more than four or five hundred additional calories may be required, while the man at severe labour, such as lumbering, may use as much as 7000 additional calories. Should such an individual become diabetic it would not be possible by any system of diet, or even by the use of insulin, to provide him with sufficient energy to carry on his occupation. In such cases it is necessary to advise the man to adopt some other type of employment. In the diet of normal individuals most of the energy required is provided by carbohydrate, but in diabetics the diet must be adjusted to contain much smaller quantities of carbohydrate. The diabetic, therefore, must use suitable quantities of fat to provide the necessary energy. One gram of protein or of carbohydrate produces in the body four calories of heat or energy, while one gram of fat yields nine calories. When the caloric requirement of the individual is known the diet suitable for his needs may be determined.

Normally the "tolerance" for foods, that is, the ability of the body to consume and assimilate food without the production of sugar in the urine, is very great. In diabetes, however, this tolerance is distinctly less, and may be very small, though almost never completely absent. As this tolerance depends on the production of insulin by the pancreas, it is unwise to overwork this organ and thus risk damaging it. Considerable care then is taken to prescribe suitable amounts of the different food principles for the individual patient. The serving of it in the form of food demands a knowledge of the exact composition of the various foodstuffs, in terms of their Protein, Fat, and Carbohydrate content, and their energy value in calories, and the ability to weigh the food required.

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CHAPTER III

MEASUREMENT OF FOOD

In modern scientific work the units of measurement are those of the metric system. A meter is approximately 39.37 inches, and a centimeter is a hundredth part of this length, or

Chatillon dietary scale with a 280 gram plate and 100 grams of cauliflower. Note position of the zero and the pointer.

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almost two-fifths of an inch. A cubic centimeter (c.c.) is the unit of volume. 1000 c.c.= 1 litre (L). The weight of 1 c.c. of water is 1 gram (1 gm.) and of 1000 c.c. one kilogram (1 kg.). It is advisable for patients with severe diabetes to learn these values early and learn their use. Several types of food scales are on the market, among the best known being Chatillon's and Hanson's. (See page 21). These are obtainable from any surgical instrument house. The 1000 gram size is the better. Both these scales possess a movable dial which permits of direct weighing of the food without subtracting the weight of the container. To weigh the meal the plate is first placed upon the scales. The pointer will move clockwise. Seizing the knob on the movable dial the latter is rotated until the 0 comes under the pointer. The required amount of a certain food may now be placed on the plate, following which the dial is again turned to zero, and another food may be weighed out. The day's allowance of foods used at several meals, such as butter and cream, are usually weighed out in the morning. Accuracy of measurement of the foods allowed is essential if treatment is to be successful.

Table I

Approximate Avoirdupois Equivalent for Metric Measures

1 1/10 yards (39.37 in.)=1 meter (m)=100 centimeters (cm.).

2/5 inch=1 centimeter (cm.).

1 wine quart=1 litre (L.)=1000 cubic centimeters (c.c.).

1 Imperial quart=1200 cubic centimeters.

1 ounce=30 cubic centimeters, or 30 grams (gm.).

2.2 pounds=1000 cubic centimeters of water=1 kilogram (kg.).

NOTES

The unit of heat or energy measurement is the calorie. One calorie of heat is that quantity of heat necessary to raise the temperature of a litre of water one degree Centigrade. One gram of Carbohydrate furnishes four calories of heat when burned; one gram of Fat yields nine calories of heat; while Protein, when burned in the body, gives up four calories of heat, the same as carbohydrate.

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CHAPTER IV

DIETETIC TREATMENT

The dietetic treatment of diabetes has been materially altered in the past few years, as more satisfactory methods have become available. As has been explained above, it is necessary to arrange the proportions of the foodstuffs in the diet somewhat differently from the average family diet. Sufficient food must be supplied for the patient to live and to carry on work without overtaxing the powers of the pancreas to manufacture insulin. It is recognized, however, that excess food is harmful to the patient, and such a luxury consumption of food, be it protein, carbohydrate or fat, is not advised. One of the most important things for the diabetic patient to learn is how to make out his menus from a dietetic prescription furnished by the physician. The ability to construct a suitable and, at the same time, a palatable diet, is a most important aid in treatment. Fortunately, though the first attempt may be somewhat tedious because of unfamiliarity with the food values, a little practice soon makes it possible to construct diets very rapidly. Moreover, when the basic menu is once arranged variations in diet usually consist in substitutions for some foods already in the menu. The various vegetables have been grouped in classes according to their carbohydrate content. (Table II) One vegetable may be replaced by the same weight of another vegetable of the same class. For these foods the substitution is carried out after reference to the table of food values. Since the fat in the diet is conveniently altered by changing the butter allowance, and also because of the great importance of carbohydrate in diabetes, greatest attention is paid to the carbohydrate content of the diet. As more than

Date.....

MENU

℞ P.....F.....C.....gms.

Meal P.....F.....C.....gms.

Daily Cream Allowance.....gms.

Daily Butter Allowance.....gms.

Breakfast

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

half the protein can be converted into carbohydrate by the body, the protein is our next consideration. It is convenient in making out an original menu to use eggs, and bacon, roast beef and ham, as the main sources of protein in the diet for the day. (Tables IV, V and VI.) In succeeding pages are given lists of equivalents for varying amounts of these foods, thus avoiding the necessity of calculating a large series of substitutes for the original protein food (page 99). A custard is often a part of a diabetic menu and a series of substitutes for it will also be found on page 117. A table showing the protein, fat and carbohydrate contents of the commoner foods will be found on page 35 (Table III). A more extensive list is given on pages 225 to 237.

The diet of a patient should approximate the normal diet as far as possible. The use of specially prepared foods for diabetics is not particularly desirable on account of the expense involved, and also dependence thereon is at times irksome. A monotonous diet must be carefully avoided, as it tends to make one dissastisfied with the meals and with treatment in general. It is astonishing how easily a diet may become almost fixed in its constituents, either through lack of imagination or perhaps the unwillingness of the patient to bother about it. Yet, looking over a normal diet, one notes exactly the same thing, and because the potentiality of diet alteration is present we are satisfied to use certain favorite foods repeatedly. The diabetic has, it is true, lost some of the potentialities of change in diet; certain of his dietetic habits have been interfered with, but there is no need for him to repeat exactly the same daily menu, even as often as once in ten years.

Those foods which have energy values are, of course, of primary importance in the menu of the diabetic. The fact should not be ignored, however, that non-nutrient substances such as broths, soups, tea, coffee, condiments, bran, etc., have

Dinner or lunch

Meal Allowance P.....F.....C.....gms.

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Previous meal

Total

a distinct value in treatment. They are used for tempting the appetite, to provide flavour, to increase the bulk of the diet and thus increase the feeling of well-being in the emaciated, excessively hungry diabetic, and also to combat loss of fluid from the tissues, and the constipation from which many patients suffer.

The cost of the average diabetic diet is greater than that of a normal diet, as many of the cheaper staples can only be used in limited quantities. Patients whose years permit should regain earning power if suitably treated. They would be well advised then to spend liberally on their own diet rather than attempt to live on cheap foods. The latter course results in monotony of diet and dissatisfaction with treatment. Skilful employment of various methods of preparing foods—roasting, stewing, frying, etc.—with the use of appropriate condiments, seasoning agents, etc., will improve the flavour of even the cheaper foods. Time and care in preparation, with a knowledge of methods of cookery, are essential in the preparation of the food for a diabetic patient.

Supper or Dinner Meal Allowance P.....F.....C.....gms.

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Previous meals _____

Total

CHAPTER V

THE PRODUCTION OF MENUS FROM THE DIET PRESCRIPTION

(1) Consider the constitutents of a normal diet and model the patient's diet along the same lines, making allowance for the differences in quantity of the various food principles prescribed. A normal individual chooses a diet made up much as follows:

Breakfast

Fruit, e.g.: grapefruit, oranges, etc.
Protein foods—eggs, bacon, fish.
Cereal foods—porridge, bread.
Fats—cream, butter.
Non-nutrient substances—coffee, tea, etc.

Lunch

Soup.
Protein foods—meats, eggs, fish, etc.
Vegetables—potatoes, carrots, lettuce, beets, etc.
Fats—cream, butter, mayonnaise dressing.
Desserts—custards, pies, fruit, fruit salad, etc.
Non-nutrients—tea, coffee, condiments.

Dinner

Similar in composition to lunch.

(2) Divide your physician's dietetic prescription in grams of the various foodstuffs by three, thus:

3	P. 45	F. 180	C. 48
	P. 15	F. 60	C. 16

TABLE II

APPROXIMATE CARBOHYDRATE CONTENT OF VEGETABLES AND FRUITS

5%	10%	15%	20%	Non-nutrients
Lettuce Cucumbers Spinach Asparagus Rhubarb Endive Marrow Sorrel Sauerkraut Beet greens Dandelion Swiss chard Celery Unsweetened pickled vegetables Twice boiled carrots " " beets " " onions " " turnips Tomatoes Brussels sprouts Water cress Sea Kale Cauliflower Egg plant Cabbage Radishes Leeks String beans Broccoli Macedoine	Onions Squash Turnip Carrots Beets Kohl-rabi Pumpkin xCanned green peas Okra xSoy beans Horseradish Catsup	xGreen peas Artichokes Parsnips xCanned lima beans	Potatoes xShell beans xBaked beans xGreen corn xBoiled rice xBoiled macaroni	Broths Bouillon cubes Tea Coffee Cracked cocoa Mushrooms Salt Pepper Sage Spices Thrice boiled 5% vegetables Agar jelly Mineral oil mayonnaise Iceland moss Irish moss
Ripe olives (contain 20% fat) Grapefruit	Lemons Oranges Cranberries Strawberries Blackberries Gooseberries Peaches Pineapple Watermelon Muskmelons Twice boiled apples Peaches canned in water	Apples Pears Apricots Blueberries Cherries Currants Raspberries Huckleberries	Plums xBananas Prunes	Measures 30 gms. or c.c. = 1 ounce 1000gms.=1 kilogram =2.2 lbs. 1000 c.c. =1 litre 1 calorie of heat raises the temperature of a litre of water 1 degree C. 1 gm. protein or carbo yields 4 calories 1 gm. fat yields 9 calories
Reckon available carbos in 5% group as 3%(3 gms. of carbos in 100 gms. vegetables) Carbos in 10% vegetables are reckoned as 6 gms. per 100 The percentage of carbos in fruits is as indicated in the table				

Count clear soups and coffee substitutes as 1 gm. carbos per 100 c.c.
xDenotes foods with considerable protein or fat. See list below.

Table III

FOOD VALUES — Average Amount per 100 Gms. Unless Otherwise Stated

Food	P.	F.	C.	Food	P.	F.	C.
Bread, white } Rolls }	9	..	55	Halibut, boiled	21	4	..
Shredded Wheat biscuit (1)	3	..	23	Salmon, boiled } " canned }	20	10	..
Cream of Wheat, dry	13	..	85	Sardines, canned	23	20	..
Oatmeal, dry } Rolled Oats }	16	7	67	Trout brook, boiled	21	2	..
Rice, dry	8	..	79	" lake, raw	18	10	..
" boiled	3	..	24	Whitefish, raw	22	7	..
Macaroni, dry	13	..	75	Lobster, raw	16	1	..
" boiled	3	15	16	Oyster, solids	6	1	3
Egg (1)	6	6	..	Shrimp, canned	25	1	..
Roast beef } Pressed beef }	23	28	..	Milk, whole	3	4	5
Boiled beef	25	23	..	" skimmed	3	..	5
Steak, tenderloin	23	20	..	Cream, 16%	2.7	16	3.8
" round, leand	27	8	..	" 20%	2.5	21	3.8
" sirloin	24	10	..	" 24%	2.2	24	3.8
Corned beef, cannet	26	19	..	" 32%	2	30	3.8
Beef tongue, canned	20	23	..	" 40%	1.8	39	3.8
Veal, raw, leg, cutle, loin	20	7	..	Cheese, domestic	28	38	..
" roasted	28	1	..	" cottage	20	..	4
Mutton, roast	26	22	..	Butter } Oleo }	..	85	..
" boiled, lean	31	5	..	Olive Oil } Salad Oil } Cooking fat }	..	100	..
" chop, lean	22	5	..				
Lamb, roast leg	20	13	..	Almonds, beechnuts	21	55	15
x " chops, broiled	18	27	..	Brazil nuts	17	67	7
Pork, roast, lean	28	10	..	Peanuts	26	39	22
" chop, lean	26	6	..	Peanut butter	29	46	17
" chop, fat	18	39	..	Filberts, Hickory nuts	15	66	13
" steak	30	45	..	Pecans	10	70	15
Bacon, average raw	10	67	..	Walnuts	18	65	12
" cooked medium	15	40	..	Dried peas, uncooked	25	1	57
Ham, boiled, smoked	20	22	..	Dried beans, uncooked	22	2	55
" fried	22	33	..	Dried soy beans, uncooked	38	15	6
Chicken, roast, young	25	5	..	Green peas, cooked	5	..	15
" broilers, raw	22	2	..	Green corn, cooked	3	1	19
" full grown	19	16	..	Banana (1)	1	..	20
Bass, raw	19	1	..	Potato	2	..	18
Cod and Haddock, boiled	22	..	..	Meat and vegetable stew	5	5	5

Values are for edible portion cooked or ready to serve except as indicated.
For convenience fractions of a gram are omitted.
xWith bone.

Table IV

Protein and fat content and caloric value of eggs and lightly cooked bacon.

	Protein grams	Fat grams	Calories in portion
1 egg	6	6	78
1 egg and bacon, 15 grams	8.2	12	141
1 egg and bacon, 20 grams	9	14	162
1 egg and bacon, 25 grams	9.7	16	183
1 egg and bacon, 30 grams	10.5	18	204
2 eggs	12	12	156
2 eggs and bacon, 15 grams	14.2	18	219
2 eggs and bacon, 20 grams	15	20	240
2 eggs and bacon, 25 grams	15.7	22	261
2 eggs and bacon, 30 grams	16.5	24	282

giving the approximate amount of food per meal. It is usually desirable to use a somewhat smaller amount of carbohydrate at breakfast and increase the evening allowance to make up the deficiency. When insulin is being used a different arrangement may be necessary in individual cases. The foodstuffs selected should be written down in order, together with the weight of the food to be used, and its content of protein, fat and carbohydrate.

(3) Consider first the carbohydrate of the breakfast. If the total carbohydrate for the day is less than 45 grams use fruit or vegetables. If over this amount 15 grams of oatmeal (weighed dry) may be used, and if 55 grams of carbohydrate are allowed both may be used. For food values see Tables II and III, or Chapter XVII, page 225.

(4) Consider next the protein of the breakfast. A small amount of protein will be used in the form of cream. The larger portion of the protein may be supplied from Table IV. Eggs and bacon, in the required amount, may be selected, and then for variety other foods of equal protein content may be chosen in their place, from Chap. XV, p. 99. Many additional selections may be made as the patient becomes increasingly familiar with food tables. When a new substitute is worked out it should be added to the table.

(5) Add cream to the limit of the remaining protein (see Table III), allowing the fat and carbohydrate to fall where they will. Since it is desired to employ the carbohydrate as much as possible in other ways, and because of its high degree of palatability, whipping cream, containing 32 per cent. fat, is usually employed. A good table cream should contain at least 18 per cent. of butter fat. Most large dairies make their cream to a definite percentage. Creams sold as whipping cream vary between 30 and 36 per cent. of butter fat.

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(6) Add the protein, fat and carbohydrate values of the foods selected. The protein equals the allowance for the meal; the carbohydrate is below the allowance as was intended, and there is usually a considerable amount of fat unused. This will usually be made up by adding sufficient butter. According to Table III, 10 gm. of butter=8.5 gm. of fat.

(7) Add the non-nutrient substances tea or coffee, and consider the meal with relation to the bulk desired. Agar jelly or thrice boiled vegetables may be used to increase the bulk. In addition, bran cakes to be eaten with butter are provided as a substitute for bread, as well as to increase the bulk of the meal.

Below is a breakfast menu constructed as has been described. While there is a little extra trouble involved in accurately weighing the food, the meal itself is not unlike the breakfast of a normal individual.

Food	Amt.	P.	F.	C.
Grapefruit	160 gm.	....	....	8
Eggs	2	14.2	18	....
Bacon	15 gm.			
Cream	70 c.c.	1.4	22.4	2.7
Butter	23 gm.	....	19.5	....
Coffee, bran cakes		....	....	....
		15.6	59.9	10.7

Thirty-three grams of lettuce, watercress or radishes would add another gram to the carbohydrate content of the above meal. A small garden can be made to yield large dividends to the diabetic in gentle recreation, exercise—and crisp tasty vegetables. Vegetables for the day's use should be pulled in the early morning and placed in the refrigerator till wanted.

Table V

Protein and fat content and caloric value of different weights of cooked roast beef.

Weight grams	Protein grams	Fat grams	Calories
30	6.9	8.4	103.2
35	8	9.8	120.2
40	9.2	11.2	137.6
45	10.3	12.6	154.6
50	11.5	14	172
55	12.6	15.4	189
60	13.8	16.8	206.4
65	14.9	18.2	223.4
70	16	19.6	240.4
75	17.2	21	257.8
80	18.4	22.4	275.2
85	19.5	23.8	292.2
90	20.7	25.1	308.7
95	21.8	26.6	326.6
100	23	28	344

Lunch

(1) The preparation of a luncheon menu is attacked in a similar fashion. When 150, or more, grams of fat per day are prescribed, it is useful to order one cream soup which can be made from a soupstock or broth, 30 to 60 grams of cream and 50 grams of almost any five per cent. vegetable. (See Table II.)

(2) For a cold lunch five per cent. vegetables in the form of a salad would be served; 150-300 grams of these vegetables provide sufficient bulk; the carbohydrate in them is reckoned as being about three per cent. of their total weight.

(3) Selection of a meat portion comes next. A somewhat smaller weight of cold meat is served than when hot meat is used, as the slices are cut somewhat thinner. This will permit of a custard, (see recipe p. 69) which contains considerable protein, being served. Select a weight of roast beef which has a suitable protein content, from Table V.

(4) Decide whether a custard (recipes, page 137) or one of its substitutes (see pages 117 to 121), or a 10 per cent. fruit (Table III) will be served. If the latter, remember to allow for a little carbohydrate in the cream.

(5) Add a portion of 32 per cent. cream, or other percentage cream if desired, according to the amount of protein and carbohydrate remaining.

(6) On addition of the food values of the foods selected it will generally be found that sufficient fat has not been ordered. If considerable, the deficiency may be supplied by using butter and an olive oil or corn oil mayonnaise. As much as 30 grams, not less than 10 grams, of butter may be used. If the fat in the prescription is insufficient and an olive oil mayonnaise is desired for the salad, it may be desirable to substitute a clear soup or bouillon at this meal. It will be found, however, that non-nutrient mayonnaise made with petroleum

Table VI

Protein and fat content and caloric value of different weights of boiled ham.

Weight grams	Protein grams	Fat grams	Calories in portion
30	6	6.6	84
35	7	7.7	97
40	8	8.8	111
45	9	10	126
50	10	11	139
55	11	12.1	153
60	12	13.2	167
65	13	14.3	181
70	14	15.4	195
75	15	16.5	209
80	16	17.6	222
85	17	18.7	236
90	18	19.8	250
95	19	21	265
100	20	22	278

oil tastes quite as good as the standard variety, and in addition is valuable for the relief of constipation.

(7) Add the non-nutrients—tea or coffee, bran cakes, agar jelly, etc.

Evening dinner

Dinner is usually served as a hot meal, and the menu is constructed in very much the same fashion as the lunch. There is, of course, no objection to serving a cold tea, with a hot noonday dinner, or even having both meals either hot or cold, as seems appropriate for the season or conforms best with the dietary habits of the household. At least two vegetables should be served at each of these meals. Whether they are chosen from the 5 per cent. or the 10 per cent. class depends largely on the bulk of food desired. Some vegetables are more easily preserved for winter use than others. The latter should be used freely during their growing season. When fruits are used for dessert it is well to add a half grain of saccharin to the cream allowance, and mix or pour it over the fruit. There is no necessity for making the protein and carbohydrate content of a diet come out exactly right and, indeed, it is often somewhat better to have these foods slightly insufficient in amount. The remnant may then be served in the form of an extra or garnishing. A radish, a slice of onion, a sardine, a shrimp or a bit of lobster, or a ball of cottage cheese provides a change of flavour to the meal which is greatly appreciated by the patient.

The following diet has been constructed in the manner described above.

℞	P. 45	F. 180	C. 48	Cream per day—265 gms.
meal	P. 15	F. 60	C.16	Butter per day—54 gm.

Date..... MENU

℞ P.....F.....C.....gms. Daily Cream Allowance.....gms.

Meal P.....F.....C.....gms. Daily Butter Allowance.....gms.

Breakfast

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Breakfast

Food	Amt.	P.	F.	C.
Oatmeal	15 gm.	2.4	1.	10.1
Bacon	30 gm.	10.5	18.	....
Egg	1			
Cream, 32%	75 c.c.	1.5	24.	2.8
Butter	20 c.c.	....	17.	....
Coffee, bran cakes		....	....	....
		14.4	60.	12.9

Lunch

Food	Amt.	P.	F.	C.
Broth (all fat removed)		....	....	....
Roast beef	45 gm.	10.3	12.6	....
Vegetable, 5%	100 gm.	....	....	3.
Vegetable, 10%	60 gm.	....	....	3.6
Vegetable salad, 5%	70 gm.	....	....	2.1
Mayonnaise		....	....	....
Cream, 32%	70 c.c.	1.4	22.4	2.7
Custard	1	4.5	5.	4.
Butter	20 gm.	....	17.	....
Tea, coffee, bran muffins, Thrice-boiled vegetables, Agar jelly, if necessary.				
		16.2	57.	15.4

Dinner

Food		Amt.	P.	F.	C.
Soup	Cream, 32%	60 c.c.	1.2	19.2	3.8
	Vegetable, 5%	50 gm.			
Cold ham		60 gm.	12.	13.2	....
Vegetable, 5%		100 gm.	....	....	3.
Vegetable salad, 5%		100 gm.	....	....	3.
Mayonnaise			....	....	....

Dinner or lunch Meal Allowance P.....F.....C.....gms.

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Previous meal ———————————

Total

Dinner..

Food	Amt.	P.	F.	C.
Cream, 32%	60 c.c.	1.2	19.2	2.3
Butter	14 gm.	....	11.9	....
Fruit, 10%	80 gm.	....	....	8.
Tea or coffee, bran muffins. Fillers, if necessary.				
		14.4	63.5	20.1
	Total	45.	180.5	48.4

It will be noted that non-nutrient bran muffins have been suggested throughout the day's menu. For the severe diabetic this furnishes the most satisfactory substitute for bread. When the expense need not be considered such non-nutrient flours as "Cellu" and "Nutrivoid" may be used. In a different category fall the flours which are made largely of protein and fat, such as: Lister's, Hepco, Diaprotein and Allenburys' flours. These preparations are almost entirely free from available carbohydrate, but are somewhat expensive, and their use materially decreases the allowance of meat which can be used. Unless large amounts of protein can be allowed in the patient's diet we have found that they usually prefer the larger quantity of meat. Many other preparations are advertised for the use of the diabetic. Patients are strongly advised to submit all such foods to their physician before using the articles, as many of them are quite unreliable, and even dangerous.

Most diabetics bear with equanimity the banishment of sugar from their diets, and many state that they have never used much sugar, or have discontinued its use because of oncoming obesity, or for some other reason. Though bread,

Supper or Dinner Meal Allowance P.....F.....C.....gms.

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Previous meals _____

Total

as we know it, is of comparatively recent origin, many patients find it the most difficult of foods to do without. Sugar is a pure carbohydrate and, being very soluble, is very rapidly absorbed. White bread contains more than 50 per cent. carbohydrate in the form of starch, and is absorbed a little less rapidly than sugar. As insulin production is low in most cases of diabetes, the use of such concentrated carbohydrates becomes inadvisable, since they will lead to immediate glycosuria (sugar in the urine) and overwork for the pancreas. A small slice of bread (30 gm.) contains 16.5 grams of carbohydrate, or more than is allowed in one meal for most diabetic patients. The use of bread in such a diet would necessitate omitting the cream and using excessively large quantities of butter, reducing the protein allowed for meats, and restricting the diet to a very few articles of food, which would soon become monotonous and unpalatable. Moreover, there would be a marked reduction in the bulk of the food allowed, and hunger and constipation would result. For these reasons, therefore, it seems advisable for the severe diabetic patient to forego the use of bread in his diet.

When the tolerance for carbohydrate is 70 grams or more, small amounts of white bread, oat-cake or potato may be allowed without robbing the meals of suitable bulk. Brown bread is not used, as it often contains sugar or molasses. The idea that toast or "torrified" bread may safely be used by the diabetic is entirely false. These latter foods are much more dangerous for the diabetic patient than white bread. Gluten flour is useful in a few cases, but the so-called gluten bread purchased from bakers is usually adulterated with white flour before baking, and in few cases has the analysis shown much less carbohydrate than ordinary bread. If gluten flour is allowed for home baking its high protein content must be considered in making a diet.

Date..... MENU

℞ P.....F.....C.....gms. Daily Cream Allowance.....gms.

Meal P.....F.....C.....gms. Daily Butter Allowance.....gms.

Breakfast

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

It has been suggested above that eggs and bacon, roast beef, and ham be used in making the original menu, and tables of equivalents for various quantities of these foods have been provided. After the original menu has been constructed it will be found little trouble to construct additional menus, using these three protein foods in a different meal, and re-balancing the fat by altering the butter allowance. As the equivalents tabulated for these foods are not quite the same in kind or amount this will provide some additional variety in the diet. Should any food be repugnant to the individual it may be struck off the list. Table VII: Eggs and Cheese, may also be used for constructing the breakfast menu. Equivalents for these have been intentionally omitted so that they can be worked out as an exercise by the patient. Use the same equivalents as used on page 99 and following pages.

More advanced exercises, which those who have mastered the production of a diet should now be competent to undertake, are the substitution of other foods containing protein, fat and carbohydrate in the diet, and the introduction of made dishes into the menu. It will be noted that we have previously substituted foods on the basis of their carbohydrate or protein content, and adjusted the fat by changing the butter allowance. When the three food principles are involved the substitution is generally done by finding the weight of food containing an equivalent amount of carbohydrate and allowing the fat and protein to fall where they will, then adjusting the meat ration to compensate for the change

Dinner or lunch Meal Allowance P.....F.....C.....gms.

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Previous meal _____

Total

TABLE VII

Protein and Fat Content of Eggs and Cheese

	Protein	Fat
1 egg	6.	6.
1 egg, 10 gm. cheese	8.8	9.8
1 egg, 15 gm. cheese	10.2	11.7
1 egg, 20 gm. cheese	11.6	13.6
1 egg, 25 gm. cheese	13.	15.5
2 eggs, 10 gm. cheese	14.8	15.8
2 eggs, 15 gm. cheese	16.2	17.7
2 eggs, 20 gm. cheese	17.6	19.6
2 eggs, 25 gm. cheese	19.	21.5
100 gm. cheese	28.	38.

The above table is constructed for ordinary domestic cheese. Should the patient require a restricted fat intake because of obesity, cottage cheese (100 gm.=20 gm. protein) may be used in constructing a similar table.

in protein and finally adjusting the fat by altering the butter allowance. For a more complete list of food analysis consult Chapter XVII, page 225, et seq. For made dishes known quantities of the various constituent foods are used; their protein, fat and carbohydrate contents are noted and allowed for in the diet. If less than the whole quantity prepared is used at a meal the whole quantity may be weighed when ready to serve, and a proportionate allowance made in the diet for the weight of the portion used.

Condiments, such as mustard, catsup, horse radish, tomato relish, Chili sauce, etc., often contain considerable carbohydrate naturally, or in the form of added flour or sugar. If specially prepared foods, containing no added starch or sugar, are not available, there is little danger in considering the

Supper or Dinner Meal Allowance P.....F.....C.....gms.

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Previous meals _____

Total

average portion of these foods as equivalent to two grams of carbohydrate, or about 60 grams of a five per cent. vegetable. Clear soups and coffee substitutes may be regarded as being equivalent to one gram of carbohydrate per 100 cubic centimeters. Vegetable soups, when unstrained, should be reckoned as containing all the carbohydrate in the vegetable used. In less severe cases of diabetes there is no objection to using a little rice, pearl barley or starch, or 20 grams of diced potato, for the purpose of thickening the soup, if their carbohydrate content is substituted for some other carbohydrate in the patient's diet.

Rapid alterations in the caloric content or carbohydrate allowance in the diet are not advisable. Though it is true that large dietary excesses will immediately become apparent by high blood sugar or glucose in the urine, this is not true of the smaller dietary changes which are sometimes shown to be too much strain on the pancreas only after a week or two weeks. In most cases it is inadvisable to increase the diet oftener than twice a week, even under hospital conditions.

Patients are naturally desirous of avoiding unnecessary complications in their dietetic regime. The physician is also desirous of attaining this end, as simplification of the patient's difficulties makes his co-operation easier. It must be emphasized, however, that most of the necessary regime for the patient is dependent directly on his own present or future tolerance for carbohydrate. His present tolerance when on suitable diet is but little under the control of the physician or patient; his future tolerance is much more dependent upon the patient's will power and morale. The lower the tolerance for carbohydrate the more easily it can be further damaged and the more necessary is it that every effort should be made to conserve it. No patient, however, can afford to lose any of the tolerance he already possesses. Because of his low tolerance,

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as well as the necessity of carefully balancing the intake against the insulin administered, no patient receiving insulin should neglect to weigh his diet. All patients on dietetic treatment alone, who are receiving 50 grams, or less, of carbohydrate, should weigh all of their diet. After a period of training those patients whose tolerance for carbohydrate itself is 60 grams may dispense with weighing the five per cent. vegetables except one day a week. Weighing the meat allowance may be similarly dispensed with if, at the same time, the protein is 60 grams, or more, and no special diabetic breads are used. Possibly weighing the 10 per cent. vegetables might be omitted at this level if great care is exercised. Ten per cent. fruits must be weighed, however. If the carbohydrate tolerance is 75 grams, weighing of breads and foods containing 20 per cent. of carbohydrate is required. If the tolerance for carbohydrate and protein is 100 grams of each, weighing may be omitted as a rule, though the patient should frequently check up by actual test his ability to estimate the weight of various foods, particularly those high in carbohydrate content.

NOTES

CHAPTER VI

INSULIN

The successful preparation of insulin in a convenient form has materially advanced our knowledge of diabetes and marks an epoch in the treatment of severer forms of the disease. Insulin is a substance produced in the pancreas of man and animals for the purpose of promoting the utilization of the carbohydrates. In diabetes this substance is deficient, though almost never entirely absent. Should the deficiency be so great that sufficient food cannot be utilized by the patient, insulin, which is obtained by artificial means from the pancreas of slaughter-house animals, may be used to supplement that produced by his own pancreas. Its effect very rapidly develops but is of comparatively short duration (five to eight hours), and it must be administered at suitable intervals under the skin, or, in certain circumstances, into the blood stream of the individual. Taken by mouth insulin and all the imitation preparations, are inert, notwithstanding any claims to the contrary put forward by interested manufacturers or uncritical observers. As insulin in normal individuals is liberated when, and in such amounts as needed, it will be seen that periodic administration of artificially produced insulin to a diabetic cannot exactly imitate the normal process and, further that the administration of insulin to patients who already can produce insulin to utilize sufficient food is valueless. Nevertheless, to those who fail to remain at a normal blood sugar level on restricted diets insulin is of very real service, and upon its proper employment rests the efficient use of not only the carbohydrate but, indirectly, the protein and fat of the diet as well. Insulin is also valuable to those diabetics who are

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suffering from infections of various sorts, as it helps to maintain normal blood sugar, and thus promote healing of the tissues, and also to prevent acidosis, which often occurs in such patients. It is exceedingly valuable when surgical operations must be performed on the diabetic patient. For the control of acidosis and coma it surpasses all other remedial agents, though it by no means replaces them. Finally, it is an anchor to windward for the diabetic who can still do without it, if, in the future, his tolerance should decrease, infections or acidosis supervene, or a surgical operation become necessary.

Insulin is obtained in sterile solution in vials containing a definite number of units to the cubic centimeter (10 units or 20 units, or 40 units per cubic centimeter). The patient's dose is measured by the number of units required. If the requirement is high the stronger solution should be used in order to avoid pain from the large volume of fluid injected. Each patient should receive instruction in the preparation of the sterile needle and syringe, measuring and injection of the insulin. By preference the needles and syringes should be boiled, as instructed in the circular accompanying each bottle of insulin. If necessary, filling the barrel of the syringe with 95 per cent. alcohol and immersion of the needles in alcohol for ten minutes will be satisfactory. After fitting the needles to the syringe care should be taken that as much as possible of the adherent alcohol is removed, by working the plunger back and forth, as the injection of alcohol into the tissues is painful. The injection of insulin must be made underneath the skin, but not into the muscle tissue of the body. Avoid damaging the skin. Fine, sharp needles (25 to 27 gauge) are best. As rapid absorption of the insulin is not desirable do not rub the site of injection. Slight irritation of the skin sometimes occurs, but can be allayed by allowing a strong solution of baking soda or Epsom salts to dry on the skin.

NOTES

The initial effect of insulin is seen in the lowering of the blood sugar which takes place. When this has become sufficiently marked excretion of sugar into the urine ceases. The sugar which thus disappears from the blood is ready to be utilized by the body, and in process of utilization it also assists in the successful utilization of the fats and proteins of the food. Thus, secondarily, the condition known as acidosis is avoided or abolished.

The burning up of the foodstuffs provides the body with the necessary energy for living and for carrying on the various activities of his occupation. A proper balance between the insulin produced by the patient's own pancreas, or injected, and the foodstuffs, is necessary to insure complete utilization. Since the severity of each case differs from others, the suitable dose of insulin to be administered can only be satisfactorily determined by accurately conducted tests with weighed amounts of food and the analysis of the blood and the urine. Insulin is usually administered in the half hour preceding a meal, since the requirement for it is greatest immediately after the meal, when the food is being absorbed.

NOTES

CHAPTER VII

THE DANGERS OF INSULIN: HYPOGLYCAEMIA

Though insufficient insulin causes diabetes mellitus, excess of insulin produces a condition which we call hypoglycaemia (low blood sugar). Severe degrees of hypoglycaemia are very dangerous, but fortunately even the mildest are accompanied by numerous warning symptoms, and the treatment is very simple and effective. Every patient using insulin should know these symptoms, their meaning and their cure.

The early symptoms are sudden pronounced hunger, weakness or fatigue, associated with a sense of impending danger and a feeling of inward trembling with pallor or flushing of the face and body and widening of the pupils. These symptoms are not always found together in the same patient. In children the heart rate is increased. More severe stages are accompanied by sweating, tremulousness, marked anxiety, exhaustion, delirium, unconsciousness, or collapse.

When the early symptoms appear there is no occasion for undue alarm. The patient should be given the juice of an orange or some candy, or, preferably, a tablespoonful of corn syrup. If the symptoms of the more severe stage are present the patient should lie down and rest. His physician should be notified, and in the meantime, a tablespoonful of corn syrup or, if this is unavailable, any carbohydrate, such as honey, candy, sugar, etc., should be given every ten minutes until relief is experienced. Patients using insulin should always carry an orange or a few glucose candies for use in an emergency.

The cause of hypoglycaemia is always unsuitable balance between insulin and the sugar in the blood tissues.

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This occurs when a meal is delayed too long after insulin has been administered, or when a meal is omitted after insulin injection, or when the food given is not absorbed due to digestive disturbances, vomiting or diarrhoea, when excessive exercise is taken, depleting the body of carbohydrate, or when large doses of insulin are taken close together. When a diabetic patient receiving insulin is being treated for an infection, or for acidosis or coma, improvement in the condition may make the previously suitable dose of insulin too large. Under these circumstances patients are advised to note carefully any symptoms of hypoglycaemia which may occur, and report them promptly. While no unnecessary use of carbohydrate can be encouraged, it is better to take a small amount of corn syrup and risk the appearance of high blood sugar and glycosuria if suspicious symptoms appear. Readjustment of the insulin dosage, under the physician's direction, should be carried out as promptly as possible.

When the adequate dose of insulin has been determined for the patient its use should not be omitted except under most unusual circumstances, and only with his physician's consent. In several cases wanton or accidental discontinuance of insulin for even a short time has led promptly to coma. Particularly is this true of patients who have been fed too liberally, or who have gained rapidly in weight. Other patients, having convinced themselves that they have recovered from diabetes and having discontinued treatment, have returned to it later, but in the meantime have invariably developed an aggravated form of the disease. The above does not apply to a temporary omission of a dose for therapeutic reasons. If vomiting or diarrhoea is present, or it is necessary for any reason to omit the meal, hypoglycaemia would occur if the insulin were given. It is, therefore, omitted until resumed under the physician's directions, or until regular meals are again being eaten

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Temporary exhaustion of the supply of insulin should not be allowed to occur, but in the event that it does the diet should be decreased by one-third and the patient should rest, preferably in bed. The full diet allowed should be resumed when new insulin arrives. As insulin keeps well care should be taken to possess an adequate supply.

NOTES

CHAPTER VIII

KETOSIS, ACIDOSIS AND COMA

When, for any reason, *insufficient carbohydrate* is being utilized by the body, the combustion of protein and fat becomes defective and the ketone bodies, acetone, acetoacetic acid and β-oxybutyric acid appear in the blood and urine. In small quantities these substances apparently give rise to no symptoms, and are only detected by chemical tests. This is known as the stage of ketosis. When sufficiently large amounts accumulate definite disarrangements of body functions are induced and, if untreated, coma and death may occur. Previously coma was the cause of death in two-thirds of all diabetics. To-day the well-treated and well-trained diabetic lapses into coma only because of his own gross carelessness. The issue is squarely up to the patient, save in those instances when an overwhelmingly severe infection, such as pneumonia, appears. Insulin will control all cases of acidosis, and usually cases of coma if suitably administered, but this is the province of the experienced physician, who should be summoned at once. Regular examination of the urine with the ferric chloride test will show when the acetone bodies are increasing in the urine long before any other symptoms of acidosis appear. Many times treatment with insulin is unnecessary to prevent acidosis, but if the ferric chloride test shows dark reddish brown, your doctor should be informed of it. Acidosis is accompanied by the strong ferric chloride reaction and deep breathing, which may be prolonged, painful or laboured, often with nausea, later with vomiting and abdominal pain, dizziness, buzzing in the ears, and a fruity odor on the breath. Drowsiness appears and gradually may become deeper, though

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marked anxiety, restlessness and delirium may occur as well. The patient must be put to bed at once and kept quiet, shades drawn, warm blankets and hot water bottles placed about him, and his physician and a nurse summoned. Fluids are very necessary, warm drinks of all sorts being allowed or pressed upon him if necessary—a half pint of fluid per hour is desirable. A cleansing enema of two to three pints of warm salt solution (one teaspoonful to the pint) or warm soapsuds should be given. Further treatment will be ordered by the doctor to suit the individual case.

NOTES

CHAPTER IX

BODY WEIGHT

Diabetes is very much more prevalent among the obese than among normal individuals, and the incidence of diabetes increases with age and with the extent of obesity. Fortunately it is not quite so severe in older people as in younger age groups but unsuitable treatment will convert an originally mild case into the most severe type of the disease. Unfortunately those whose prosperity has found expression in over consumption of food, too little exercise, and obesity are exactly the people who many times are unwilling to control their diet until a marked loss of carbohydrate tolerance induces alarm because of weakness, thirst, and loss of weight. The energy required to live and to work rapidly increases with increasing size of the individual. It naturally follows that the damaged pancreas, which has to produce insulin for the utilization of the foodstuffs, is overworked. All such patients do better at more normal weights. It must not be thought, however, that marked under-nutrition is desirable. The severely emaciated patient is much more liable to infections than the patient at, or ten per cent. below, the average weight for his height and age. It is desirable to decrease the fat intake of the obese diabetic below his daily requirement. The under-nourished diabetic, on the other hand, is encouraged to gain in weight by rest and the provision of adequate calories. The building up of large stores of fat in such cases is useless, and even dangerous. A gain in weight should be slow but steady, and should be accompanied by a recovery of strength due to a restoration of the muscle tissues of the body.

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CHAPTER X

INFECTIONS

Infection lowers the tolerance of the diabetic for carbohydrate. Not only the more severe infections: pneumonia, scarlet fever, typhoid fever, diphtheria, etc., but even the so-called "minor infections", such as: colds, boils, sore throat, abscessed teeth, tonsillitis, indolent leg ulcers, etc., lower the patient's tolerance temporarily or even permanently. Apart from improper diet infection is the greatest cause of progress of the disease.

The toxic prodcts of the bacteria causing the infection injure the pancreas and cause increased severity of the diabetes. Hyperglycaemia (high blood sugar) and increased glycosuria occur, and, under these cricumstances, acidosis may be caused from defective utilization of the fats, thus exposing the patient to the possibility of diabetic coma. The infection itself is usually more severe on account of the low grade of resistance of the untreated diabetic and healing is delayed because of the high sugar content of the blood.

While not furnishing full insurance against infections, since normal people often acquire them, suitable treatment of the diabetes is a great help in their prevention. It is, to-day, much easier than formerly to maintain normal standards of health in the daibetic patient by suitable precautions. The diabetic who is sugar free and whose blood sugar is normal is decidedly less prone to infection than the untreated diabetic, and his power of healing is close to that of a normal individual. In institutions adequately equipped for the care of diabetics the treatment of infections and other diseases occurring during diabetes can be carried out as successfully as in the non-diabetic patient.

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No diabetic can afford to neglect precautions against infection. Since many infections are readily transferable from one person to another, the patient is well advised to avoid close contact with others suffering from disease. Cuts, scratches and abrasions should be thoroughly washed with soap and water and protected against further injury. Should the patient develop any infection he should immediately consult his physician. Pending his arrival the patient should go to bed, keep warm, take at least half a pint of fluid per hour, secure a free movement of the bowels and reduce his diet to two-thirds the usual working diet. Should insulin be used such a procedure may expose him to the danger of hypoglycaemic reaction. The insulin dosage should, therefore, be temporarily reduced proportionally to the diet.

As some anaesthetics, like infections, tend to lower a patient's tolerance he should not undergo any operation without informing the surgeon or dentist of his condition.

NOTES

CHAPTER XI

HYGIENE

Personal cleanliness is a duty owed not only to our neighbours, but to ourselves, and its neglect is apt to bring its own reward. For the diabetic, whose tissues are more easily damaged than the normal, the requirements of health demand a more than usual care in this matter. Frequent warm baths with changes of linen, persistent care of the teeth under the supervision of a competent dentist, the wearing of clothing suitable to the season, avoidance of chills, wet feet, etc., are necessary. Constipation should be avoided, preferably by establishment of regular habits or by the use of various sorts of non-nutrient foods or oils. In all patients beyond forty years of age great care should be taken of the feet to avoid the possibility of gangrene. They should be washed daily and carefully dried. If dry and scaly they should be well rubbed with wool fat, and woollen stockings should be worn. Shoes should always be easy fitting. Corns and callosities should not be cut with a knife. Gentle rubbing with pumice stone after prolonged soaking in warm water will reduce these without danger. If any abrasion occurs on the skin use no strong antiseptic. Soap and water washing of the affected part and wrapping in sterile gauze is usually all that is necessary. Consult your physician early if redness, swelling, much pain, or if any discharge appears. Avoid movement of the affected part as much as possible. Early attention to these matters will tend to prevent a possible damage, which once established cannot be repaired.

NOTES

CHAPTER XII

TRAVELLING

It occasionally happens that a patient with severe diabetes must take a meal on a train, in a restaurant or a hotel, where there is no means of weighing the food. This state of affairs is by no means satisfactory, and should, if possible, be avoided. Yet, it must be recognized as necessary under some conditions. In these circumstances it will be advisable to take too little food rather than too much. In particular, the fat should be reduced in amount. A few bran cakes carried in the pocket will help to make the meal palatable, and raw fruits may be ordered for desert. To provide bulk the patient should order carbohydrates, largely in the form of five per cent. vegetables A French salad of five per cent. vegetables with vinegar and oil dressing, is usually available. Meats may be ordered, and a portion of similar size to that used at home consumed. Eggs, bacon and hot or cold roast beef are almost invariably on the menu. The cream served in restaurants is usually about 16 per cent. butter fat. About the same volume of cream may be used as occurs in the patient's original menu. If milk is served instead, an additional pat of butter may be allowed. For patients taking insulin the situation is more complicated. A syringe may be sterilized by drawing the barrel full of pure grain (ethyl) alcohol and allowing to stand ten minutes.* Needles may be sterilized by immersing in alcohol. It will probably be advisable to use some two-thirds the usual dose

*Some manufacturers will put up insulin in small antitoxin syringes containing 2 to 4 c.c., with extra sterilized needles. Prospective purchasers should write for quotations, specifying their requirements.

Date..... MENU

℞ P.....F.....C.....gms. Daily Cream Allowance.....gms.

Meal P.....F.....C.....gms. Daily Butter Allowance.....gms.

Breakfast

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

of insulin. Glucose candy should be carried to control hypoglycaemia, if this should develop. The greater the patient's experience in weighing his food the better will he be able to carry out such a programme without producing glycosuria or acidosis. Nevertheless, success in this undertaking should not induce a severe diabetic to give up the regular practice of weighing his food, as it is a well recognized fact that such a course ultimately leads to disaster. For persons doing much travelling, pocket scales have been devised. The following examples of menus may be suggested for the use of a patient on a diet of: P. 50, F. 180, C. 50. Meals equal: P. 16, F. 60, C. 17. By anticipating the need for it other menus may be constructed more suitable for the individual requirements.

Breakfast	P.	F.	C.
Grapefruit, 150 gm.	....	....	7.5
Eggs, 2	12.	12.	....
Bacon, 20 gm.	3.	8.	....
Cream, 100 c.c.	2.7	16.	4.
Butter, 2 pats	....	17.	....
Coffee			
	17.7	53.	11.5

Breakfast	P.	F.	C.
Oatmeal, small portion	2.4	1.	10.
Eggs, 2	12.	12.	....
Cream, 100 c.c.	2.7	16.	4.
Butter, 2 pats	....	17.	....
Coffee			
	17.1	46.	14

Dinner or lunch Meal Allowance P..... F..... C..... gms.

Food..... Amount..... P..... F..... C..... Cal.....

Subtotal for meal P..... F..... C..... Cal.....

Previous meal _____

Total

Dinner or Lunch	P.	F.	C.
Soup, clear consommé, 100 c.c.	....	....	1.
Roast beef, 60 gm.	13.8	16.8	....
French salad, 200 gm. mixed 5% vegetable	....	....	6.
Olive oil, 10 c.c.	....	10.	....
Vinegar	....	....	....
Fruit, 10%, 80 gm.	....	....	8.
Cream, 75 c.c.	2.0	12.	2.9
Butter, 20 gm. (2 pats)	....	17.	....
Coffee			
	15.8	55.8	17.9

Dinner or Lunch	P.	F.	C.
Broth, clear	....	....	....
Roast beef, 50 gm.	11.5	14.	....
Vegetable, 5%, 100 gm. / Vegetable, 5%, 100 gm.	....	....	6.
Fruit, 10%, 80 gm.	....	....	8.
Cream, 75 c.c.	2.0	12.	2.9
Butter, 30 gm.	....	25.5	....
Cheese, 10 gm.	2.8	3.8	....
Coffee			
	16.3	55.3	16.9

Supper or Dinner Meal Allowance P.....F.....C.....gms.

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Previous meals _____

Total

CHAPTER XIII

THE ANALYSIS OF THE URINE

Success in the treatment of the diabetic patient is based on his accurate knowledge of his own condition from day to day. Care in the preparation and weighing of the diet and, in necessary instances, fidelity in carrying out instructions for the use of insulin in his own particular case is essential, but no less important is the acquirement of the habit of regularly examining the urine. A serene confidence that everything is all right, or a fear lest sugar or acid bodies might be discovered, should not be allowed to interfere with this daily duty. The time to discover and correct errors in treatment is before irreparable damage has taken place. Because of the ease with which this duty can be put off it is desirable that it should have a regular place in the day's routine, and be faithfully performed. The mental satisfaction of knowing that one is winning the game is an incentive to continue playing according to the rules. The visible demonstration that ultimately one does not cheat the doctor, but merely cheats himself, is a warning against the continuance of unsafe dietaries.

Collection of the urine for test should be made throughout the twenty-four hours. Occasionally this cannot be made complete without great inconvenience. It should then be realized that in patients requiring only dietetic treatment, sugar in the urine secreted during the night is the exception rather than the rule. Glycosuria is most apt to occur after lunch, or after the evening meal has been digested, and plans should be made to include this urine in the test. For the patients receiving insulin it is a little more difficult to frame a rule. They are, however, more liable to glycosuria in the

NOTES

early morning specimen than dietetic cases, though if the insulin dosage is inadequate sugar may appear in the urine at any time of the twenty-four hours.

Test for sugar

The best test for sugar is that of Benedict (formula given below). Care should be taken to perform and read the test exactly as instructed if reliable results are to be expected.

BENEDICT'S QUALITATIVE REAGENT FOR SUGAR

Recrystallized copper sulphate	17.3 gm.
Sodium or potassium citrate	173. gm.
Sodium carbonate, anhydrous	100. gm.
Distilled water to make	1000 c.c.

Dissolve the citrate and carbonate in 700 c.c. of water with heat. Filter if necessary, and add the copper sulphate (dissolved in 100 c.c. water) slowly with constant stirring. Cool and add water to 1000 c.c. (This solution may be purchased prepared for use.)

Directions for use: To 5 c.c. of Benedict's solution in a test tube add 8 drops of urine. Boil two minutes over a free flame, or five minutes in a vessel filled with boiling water. Set aside to cool. If, after cooling, the mixture becomes absolutely opaque when shaken up, sugar is present. The colour may be green, yellow or red, varying with the amount of sugar present. With sugar free urine the test solution remains blue.

Diacetic Acid or Acetoacetic Acid

Careful adherence to the diet prescribed will, in most cases, be sufficient to maintain a patient free from acid poisoning. Since, however, it is not possible to guarantee freedom from infections, colds, etc., it is desirable that every patient should learn to make the ferric chloride test for diacetic acid. This

NOTES

test is sufficiently delicate to detect this substance before harm is done. A positive test should be immediately reported to the physician, who will recommend the necessary measures for the elimination of the poison. If a physician is not immediately available, precautions as given for acidosis should be adopted.

To one quarter test tube full of urine add 10 per cent. ferric chloride solution until the opacity produced just redissolves. If diacetic acid is present in any considerable amount the colour of the mixture will become decidedly deeper brown than the ferric chloride solution. When aspirin and other coal tar drugs, headache remedies, etc., are being used, the addition of ferric chloride solution to the urine will produce a dark colour, but of a bluish or violet tint.

NOTES

CHAPTER XIV

THE BLOOD SUGAR

While the presence of sugar in the urine will indicate to the patient any gross error in diet and, under suitable conditions, may permit more extensive inferences to be made as to the patient's condition, it must be understood that the mere appearance of sugar in the urine is not of importance primarily because of the amount of nourishment lost, though at times this may be considerable, but because its appearance indicates insufficient production of insulin to maintain the blood sugar at the normal level. Under normal conditions, the blood sugar varies slightly, but is always maintained well below the level at which excretion of sugar occurs. Raising the blood sugar level induces insulin production to counteract it, and forms a severe strain on the damaged pancreas of the diabetic. Modern treatment demands in this respect greater care in the maintenance of normal blood sugar levels than was previously attempted, as it is only by careful treatment of the remaining islet cells that we may hope to conserve the patient's tolerance for carbohydrate. During the period of determination of the patient's tolerance, and the gradual building up of his diet to a working level, several blood sugar examinations will be required. Once he has been stabilized on a known diet with a satisfactory blood sugar level frequent examinations become unnecessary, though it is desirable to check up at intervals in order to detect the first sign of decreasing tolerance. Non-adherence to suitable diet, or diet and insulin, and the occurrence of in-

NOTES

fections are the principal causes for loss of tolerance. The estimation of the blood sugar is not taken up here, as it requires too much technical skill and expensive apparatus to be readily available. Fortunately, however, blood can be collected, mixed with a suitable preservative, and forwarded by mail to a laboratory possessing the necessary equipment.

NOTES

CHAPTER XV

TABLES OF EQUIVALENTS

for

EGGS, BACON, ROAST BEEF, HAM, CUSTARD, MISCELLANEOUS EQUIVALENTS

Equivalents of 1 Egg*	Protein 6. Fat 6.	
	Add Butter gms.	Omit Butter gms.
1. 15 grams Bread—Allenbury's	5	
2. 30 grams Bread—Diaban, omit 40 grams 10% Fruit		
3. 15 grams Bread—Diaprotein	5	
4. 15 grams Bread—Lister	5	
5. 35 grams Bread—Nutrivoid, omit 20 grams Vegetable, 5%		
6. 20 grams Cheese—Canadian or Swiss		1
7. 30 grams Cheese—Cottage, omit 10 grams Fruit, 10%	7	
8. 27 grams Cheese—Roquefort		2
9. 22 grams Cod—salt, , boneless, with 20 grams 32% cream		
10. 40 grams Crab meat	7	
11. 25 grams Finnan Haddie, smoked	7	
12. 30 grams Ham, fried		5
13. 30 grams Herring, smoked	4	
14. 35 grams Liver—calf's, raw	5	
15. 35 grams Mackerel—salt E.P.		3
16. 100 grams Oysters—6. Omit 100 grams vegetables 5%	5	

*Take double the weight of equivalent when substituting for two eggs.

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		Add Butter gms.	Omit Butter gms.
17.	30 grams Salmon, canned	3	
18.	25 grams Sardines	2	
19.	20 grams Sturgeon, dried (Russia)	5	
20.	20 grams Sturgeon Caviar, Russian. Omit 15 grams Fruit, 10%	3	
21.	25 grams Tuna Fish	1	
22.	1 Soy bean muffin and 10 grams extra Bacon. Omit 15 grams Fruit, 10%		2

EQUIVALENTS OF 15 GRAMS BACON, COOKED

PROTEIN 2.2. FAT 6.

		Add Butter gms.	Omit Butter gms.
1.	5 grams Bread—Allenbury's, Diaprotein or Lister	6	
2.	10 grams Bread—Diaban. Omit 15 grams 10% Fruit	5	
3.	10 grams Bread—Nutrivoid	5	
4.	10 grams Cheese—Domestic	3	
5.	10 grams Cheese—cottage	7	
6.	10 grams Ham, fried	3	
7.	10 grams Nuts, almonds; omit 15 grams 10% Fruit		
8.	10 grams Nuts, Brazil; omit 20 grams 5% Vegetable		
9.	15 grams Filberts, Hickory nuts; omit 20 grams 10% Fruit		4
10.	20 grams Pecans; omit 30 grams 10% Fruit		9
11.	10 grams Sardines	5	

NOTES

EQUIVALENTS OF 20 GRAMS BACON — PROTEIN 3. FAT 8.

		Add Butter gms.	Omit Butter gms.
1.	8 grams Bread—Allenbury's, Diaprotein or Lister		
2.	15 grams Bread—Diaban; omit 20 grams 10% Fruit	6	
3.	15 grams Bread—Nutrivoid	3	
4.	10 grams Cheese—Domestic or Swiss	5	
5.	15 grams Cheese—cottage; omit 20 grams 5% Vegetables	8	
6.	13 grams Ham, fried	4	
7.	14 grams Nuts—Almonds; omit 20 grams Fruit, 10%		
8.	17 grams Nuts—Brazil; omit 10 grams Fruit, 10%		4
9.	20 grams Nuts—Filberts, Hickory; omit 25 grams Fruit, 10%		6
10.	30 grams Nuts—Pecans; omit 45 grams Fruit, 10%		15
11.	13 grams Sardines	6	

EQUIVALENTS OF 25 GRAMS BACON, COOKED

PROTEIN 3.8. FAT 10.

		Add Butter gms.	Omit Butter gms.
1.	10 grams Bread—Allenbury's, Diaprotein or Lister	10	
2.	20 grams Bread—Diaban; omit 30 grams 10% Fruit	7	
3.	20 grams Bread—Nutrivoid	8	
4.	15 grams Cheese—Domestic or Swiss	5	
5.	15 grams Cheese—cottage	12	
6.	15 grams Ham, fried	6	

NOTES

		Add Butter gms.	Omit Butter gms.
7.	15 grams Nuts—Almonds, Beechnuts; omit 20 grams 10% Fruit	2	
8.	20 grams Brazil Nuts; omit 10 grams 10% Fruit		4
9.	25 grams Nuts—Filberts; omit 30 grams 10% Fruit		8
10.	35 grams Nuts—Pecans; omit 50 grams 10% Fruit		17
11.	15 grams Sardines	9	

EQUIVALENTS OF 30 GRAMS BACON, COOKED

PROTEIN 4.5. FAT 12.

		Add Butter gms.	Omit Butter gms.
1.	12 grams Bread—Allenbury's, Diaprotein or Lister	12	
2.	23 grams Bread—Diaban; omit 30 grams 10% Fruit	9	
3.	25 grams Bread—Nutrivoid	10	
4.	16 grams Cheese—Domestic or Swiss	7	
5.	23 grams Cheese—cottage; omit 20 grams 5% Vegetables	14	
6.	20 grams Ham, fried	6	
7.	21 grams Nuts—Almonds, Beechnuts; omit 30 grams 10% Fruit		
8.	26 grams Nuts—Brazil; omit 15 grams 10% Fruit		6
9.	30 grams Nuts—Filberts; omit 40 grams 10% Fruit		9
10.	45 grams Nuts—Pecans; omit 70 grams 10% Fruit		23
11.	20 grams Sardines	9	
12.	One Soy Bean Muffin; omit 15 grams 10% Fruit	10	

NOTES

Equivalents of 2 Eggs and 15 grams Cooked Bacon

Protein 14.2. Fat 18.

		Add Butter gms.	Omit Butter gms.
1.	70 grams Cottage Cheese; omit 30 grams 10% Fruit	21	
2.	52 grams Cod, salt, boneless	20	
3.	One egg and 26 grams bread, Allenbury's, Diaprotein, or Lister	11	
4.	One egg and 45 grams bread, Nutrivoid	5	
5.	One egg and 30 grams Canadian or Swiss cheese	1	
6.	One egg and 40 grams Cottage cheese; omit 15 grams 10% Fruit	14	
7.	One egg and 40 grams Ham, fried		2
8.	One egg and 36 grams Sardines	5	
9.	One egg plus one white and one Soy Bean Muffin; omit 15 grams 10% Fruit	11	
10.	59 grams Finnan Haddie	21	
11.	65 grams Ham, fried		4
12.	75 grams Liver—calf's (raw)	16	
13.	77 grams Mackerel, fresh (raw)	16	
14.	83 grams Mackerel, Salt, E.P.		4
15.	51 grams Sturgeon, dried, A.P.	16	
16.	85 grams Sweetbreads, raw	9	

Equivalents of 2 Eggs and 20 grams Bacon

Protein 15. Fat 20.

		Add Butter gms.	Omit Butter gms.
1.	75 grams Cheese—cottage; omit 30 grams 10% Fruit	23	
2.	56 grams Cod, salt, boneless	22	

NOTES

		Add Butter gms.	Omit Butter gms.
3.	One Egg and 50 grams Bread—Allenbury's, Diaprotein, or Lister	20	
4.	One Egg and 50 grams Bread—Nutrivoid	7	
5.	One Egg and 2 Soy Bean Muffins; omit 30 grams 10% Fruit	10	
6.	One Egg and 35 grams Cheese—Domestic or Swiss		
7.	One Egg and 41 grams Ham, fried		
8.	One Egg and 40 grams Sardines	7	
9.	62 grams Finnan Haddie	24	
10.	70 grams Ham, fried		4
11.	79 grams Liver—calf's, raw	19	
12.	79 grams Mackerel, fresh	16	
13.	87 grams Mackerel, salt		3
14.	54 grams Sturgeon, dried	18	
15.	90 grams Sweetbreads, raw	11	

EQUIVALENTS OF 2 EGGS AND 25 GRAMS BACON

PROTEIN 15.8. FAT 22.

		Add Butter gms.	Omit Butter gms.
1.	75 grams Cheese—cottage; omit 30 grams 10% Fruit	26	
2.	58 grams Cod, salt, boneless	26	
3.	One Egg and 30 grams Bread—Allenbury's, Diaprotein, or Lister	22	
4.	One Egg and 55 grams Bread—Nutrivoid; omit 10 grams 10% Fruit	22	
5.	One Egg and 2 Soy Bean Muffins; omit 30 grams 10% Fruit	8	
6.	One Egg and 35 grams Cheese—Domestic or Swiss	4	
7.	One Egg and 45 grams Ham, fried	2	
8.	One Egg and 43 grams Sardines	9	

NOTES

		Add Butter gms.	Omit Butter gms.
9.	66 grams Finnan Haddie	26	
10.	70 grams Ham, fried		2
11.	83 grams Liver—calf's, raw	21	
12.	86 grams Mackerel, fresh	18	
13.	92 grams Mackerel, salt		3
14.	56 grams Sturgeon, dried	20	
15.	95 grams Sweetbreads, raw	12	

EQUIVALENTS OF 2 EGGS AND 30 GRAMS BACON

PROTEIN 16.5. FAT 24.

		Add Butter gms.	Omit Butter gms.
1.	80 grams Cheese—cottage; omit 35 grams 10% Fruit	28	
2.	61 grams Cod, salt, boneless	28	
3.	One Egg and 38 grams Bread—Allenbury's, Diaprotein, or Lister	15	
4.	One Egg and 55 grams Bread—Nutrivoid	12	
5.	One Egg and 10 grams Bacon, 2 Soy Bean Muffins; omit 30 grams 10% Fruit	6	
6.	One Egg and 37 grams Cheese—Domestic	5	
7.	One Egg and 50 grams Cheese—cottage; omit 20 grams 10% Fruit	21	
8.	One Egg and 48 grams Ham, fried	3	
9.	One Egg and 45 grams Sardines	11	
10.	69 grams Finnan Haddie	28	
11.	75 grams Ham, fried		1
12.	87 grams Liver—calf's, raw	23	
13.	90 grams Mackerel, fresh	21	
14.	96 grams Mackerel, salt		2
15.	59 grams Sturgeon, dried	22	
16.	100 grams Sweetbreads, raw	14	

ROAST BEEF EQUIVALENTS

Beef, roast.....gms.	30	35	40	45	50	55	60	65	70	75	80
Mutton, roast.....	*26+1	31+1	35+1	39+2	44+2	49+2	53+2	57+2	62+2	66+2	71+2
Pork chop, lean.....	27+8	31+9	35+11	40+12	44+13	49 15	53+16	57+17	62+18	66+20	71+21
Pork, roast, lean.....	25+7	29+8	33+9	37+10	41+11	45+13	49+14	53+15	57+16	62+17	66+18
Turkey, roast.....	25+4	29+5	33+6	37+7	41+8	45+8	50+9	54+10	58+10	62+11	67+12
Veal cutlet, raw.....	35+7	40+8	46+9	51+11	57+12	63+13	70+14	75+15	80+16	86+17	92+18
Veal, roast.....	25+10	29+11	33+13	37+15	41+16	45+18	49+19	53+21	57+22	62+24	67+25
Salmon, canned or boiled.....	35+6	40+7	46+8	51+9	57+10	63+11	70+12	75+13	80+14	86+15	92+16
Salmon, raw.....	32+2	37+3	42+3	47+3	52+4	57+4	63+4	68+4	73+5	78+5	84+5
Trout, lake or salmon, raw.....	39+5	45+6	52+7	58+8	64+9	70+10	77+11	83+12	90+13	96+14	102+15
Whitefish, raw.....	32+8	37+9	42+10	47+11	52+12	57+13	63+15	68+16	73+17	78+18	84+20
Halibut.....	33+8	38+10	44+11	49+12	55+14	60+15	66+17	70+18	77+19	82+21	88+22

ROAST BEEF EQUIVALENTS

Beef, roast.....gms.	30	35	40	45	50	55	60	65	70	75	80
Beef, boiled.....	28+2	32+3	37+3	40+4	45+4	50+5	55+5	60+5	65+5	70+6	74+6
Beef, round, raw.....	35+4	39+5	45+6	51+7	57+8	63+8	68+9	74+10	79+11	85+11	91+12
Beef, round.....	25+8	30+9	35+10	38+11	42+12	47+14	51+15	55+16	60+17	65+18	68+20
Beef, sirloin, raw.....	36+2	42+3	48+3	54+3	60+3	66+4	72+4	78+4	84+5	90+5	97+5
Beef, sirloin.....	30+6	35+7	40+8	43+10	48+11	53+12	58+13	62+14	67+15	72+16	77+17
Chicken, roast, full-grown.....	35+3	42+4	48+4	55+5	60+5	65+6	73+6	80+6	85+7	90+8	97+8
Chicken, roast, young.....	28+8	32+10	36+11	40+12	45+14	50+15	55+16	60+18	65+19	70+21	74+22
Lamb chop, E. P.....	30	36−1	42−1	47−1	52−2	57−2	63−2	68−2	74−2	79−3	84−3
Lamb chop, raw.....	35+2	41+2	47+3	53+3	59+3	65+3	71+3	76+4	83+4	88+5	93+5
Lamb, roast.....	35+5	40+5	46+6	52+7	58+8	63+8	69+9	75+10	81+11	86+11	92+12
Mutton, lean.....	22+8	26+10	30+11	33+13	37+14	41+16	44+17	48+18	52+20	55+21	59+23

*First figure gives the weight of the substitutes; second figure the weight of butter required to be added to or subtracted from the day's allowance.

Unless stated all weights are for cooked meats.

BOILED HAM EQUIVALENTS

HAM—Boiled	30	35	40	45	50	55	60	65	70	75	80
Pork Chop—lean*	23+6	27+7	31+8	34+9	39+10	42+11	46+12	50+13	54+14	58+15	62+16
Veal Cutlet—raw	30+5	35+6	40+7	45+8	50+9	55+10	60+11	65+12	70+13	75+14	80+15
Veal—roast	22+7	25+8	29+10	33+11	36+12	40+14	43+15	47+16	50+18	54+19	58+20
Cod	28+8	32+9	37+10	41+11	46+13	50+14	55+16	60+17	64+18	69+19	73+20
Halibut—cooked	29+6	33+8	38+9	43+10	48+10	52+11	57+12	62+13	67+14	71+15	76+16
Lobster	38+8	44+8	50+10	56+11	63+12	69+13	75+15	81+16	88+17	94+18	100+20
Salmon—canned or boiled	30+4	35+5	40+5	45+6	50+7	55+8	60+9	65+9	70+10	75+11	80+11
Sardines	26+2	30+2	35+2	39+2	43+3	48+3	52+3	56+3	61+3	65+3	69+4
Shrimp	24+7	28+8	32+10	36+11	40+12	44+14	48+15	52+16	56+18	60+19	64+20
Smelts (raw)	34+7	40+8	46+9	51+11	57+12	63+13	69+14	74 15	80+16	86+16	91+19
Sweetbreads	36+3	43+3	49+4	55+4	61+4	67+5	73+5	79+5	85+6	91+6	97+7
Trout—lake or salmon—raw	33+4	39+4	44+5	50+6	56+6	61+7	67+8	72+8	78+9	83+10	89+10

BOILED HAM EQUIVALENTS

HAM—Boiled	30	35	40	45	50	55	60	65	70	75	80
Beef—corned	23+3	27+3	31+4	34+4	39+4	42+5	46+5	50+6	54+6	58+7	62+7
Beef—roast	26−1	30−1	35−1	39−1	43−2	48−2	52−2	56−2	61−2	65−2	70−2
Beef—round, raw	30+3	35+4	40+4	45+4	50+5	55+5	60+6	65+6	70+7	75+8	80+8
Beef—Sirloin, raw	32+1	37+1	42+1	47+1	53+1	58+1	63+1	68+2	74+2	79+2	85+2
Chicken—Roast—full-grown	32+2	37+2	42+3	47+3	53+3	58+3	63+4	68+4	74+4	79+5	85+5
Chicken—Roast—young	24+6	28+7	32+8	36+9	40+11	44+12	48+13	52+14	56+15	60+16	64+16
Duck—roast	20+5	23+7	26+8	29+9	32+10	35+11	39+12	42+12	45+13	49+14	52+15
Egg & Canadian Cheese	1	1c 5+1	1c 8+1	1c 10+1	1c 15+1	1c 18+1	1c 20+1	2c 5+1	2c 8+1	2c 10+1	2c 15+1
Ham—fried	27−3	32−3	36−4	41−4	45−4	50−5	54−5	59−6	64−6	68−7	73−8
Lamb Chop—raw	31+1	36+1	41+1	46+1	51+1	56+1	62+1	67+2	72+2	77+2	82+2
Lamb—roast	30+3	35+4	40+4	45+5	50+5	55+6	60+6	65+7	70+7	75+8	80+8

*First figure gives the weight of the substitutes; second figure the weight of butter required to be added to or subtracted from the day's allowance.

Unless stated all weights are for cooked meats.

NOTES

CUSTARD EQUIVALENTS

Pro. 4.5 Fat 5. COH 4.

MAY OMIT CUSTARD FOR ANY ONE OF THE FOLLOWING

		Add Butter gms.	Omit Butter gms.
1.	25 grams Almonds		10
2.	Bavarian Cream with Custard Sauce —2, add 60 grams 5% Vegetable		
3.	Blanc Mange		3
4.	25 grams Brazil Nuts, add 20 grams 10% Fruit		14
5.	15 grams Bread—Allenbury's, Diaprotein or Lister, add 40 grams 10% Fruit	4	
6.	22 grams Bread—Diaban, add 30 grams 5% Vegetable		
7.	25 grams Bread—Nutrivoid, add 40 grams 10% Fruit	1	
8.	120 grams Buttermilk; omit 30 grams 10% Vegetable	5	
9.	15 grams Canadian Cheese and Cranberry Jelly; omit 30 grams 10% Vegetable		
10.	15 grams Canadian Cheese and 40 grams 10% Fruit		
11.	Chocolate Ice Cream; omit 30 grams 5% Vegetable		7
12.	Coffee Cream, add 30 grams 10% Fruit		8
13.	4 Drop Cookies, add 30 grams 10% Fruit		4
14.	3 Peanut Cookies, add 30 grams 10% Fruit		6

NOTES

		Add Butter gms.	Omit Butter gms.
15.	1 D'Zerta with Custard Sauce—1		
16.	1 Egg white, 15 grams Cream and 70 gms. Pumpkin Custard or Pie		
17.	30 grams Filberts		17
18.	Floating Island		
19.	Frozen Custard or Coffee Ice Cream		5
20.	Jelly Dessert or Jelly Whip		
21.	Junket, add 10 grams Almonds; omit 30 grams 10% Vegetable		4
22.	3 Macaroons, add 30 grams 10% Fruit, or 100 grams Rhubarb		
23.	120 grams Milk; omit 30 grams 10% Vegetable		
24.	Milk Sherbet; omit 30 grams 10% Fruit		
25.	Orange Ice, add 1 Egg white; omit 20 grams 10% Fruit	6	
26.	Orange Snow Pudding with Custard Sauce—2		
27.	30 grams Pecans		19
28.	18 grams Peanuts		2
29.	Plum Pudding, add 10 grams Cottage Cheese; omit 40 grams 10% Fruit		1
30.	Prune Whip or Spanish Cream—1		
31.	Sago Pudding, add 10 grams Cottage Cheese; omit 50 grams 5% Vegetables		
32.	1 Soy Bean Muffin, add 25 grams 10% Fruit	1	
33.	Snow Pudding with Custard Sauce—2		
34.	Cornstarch Pudding, omit 30 gms 10% fruit		6

NOTES

		Add Butter gms.	Omit Butter gms.
35.	Spanish Cream—2, add 60 grams 5% Vegetable		
36.	Vanilla Ice Cream; omit 15 grams 10% Fruit		14
37.	25 grams Walnuts (California)		13

MISCELLANEOUS EQUIVALENTS

1. May omit 10 grams Cottage Cheese for 5 grams Lister Bread.
2. May omit Cream Soup for Mousse with 15 grams of any 10% Fruit.
3. May omit 30 grams Queen Olives for 80 grams 5% Vegetable and 7 grams Butter.
4. May omit 20 grams Queen Olives for 50 grams 5% Vegetable and 15 grams 32% Cream, or 5 grams Butter.
5. May omit 100 grams 5% Vegetable for 50 grams 10% Vegetable, or 30 grams 10% Fruit.
6. May omit 100 grams 5% Vegetable for 10 grams Lettuce, 20 grams cubed Celery and 20 grams raw Apple, cubed; 2 grams Chopped Walnuts may be added. Serve with Mineral Oil Mayonnaise.
7. May omit 15 grams Oatmeal for 8 grams Lister Bread and 100 grams 10% Fruit.
8. May omit 15 grams Oatmeal for 13 grams Cornflakes.
9. May omit 15 grams Oatmeal for 12 grams Puffed Rice.
10. May omit 15 grams Oatmeal for 13 grams Shredded Wheat.
11. May omit 20 grams Oatmeal for 7 grams Lister Bread and 130 grams 10% Fruit.
12. May omit 10 grams Lister Bread for 20 grams Nutrivoid Bread. Omitting also 3 grams Butter.
13. May omit one Egg, 100 grams 10% Fruit and 2 grams Butter for 200 grams Milk.

NOTES

CHAPTER XVI

RECIPES

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As previously stated, it is undesirable that a patient should become dependent upon specially prepared foods. Such an individual invariably receives a monotonous diet and suffers from a sense of isolation from the family, which makes him discontented and unhappy. We would suggest that, as far as possible, he should use the foods prepared for the other members of the household, a regimen which has another advantage, namely, that it reduces the amount of extra cooking required.

For the usual recipes, the reader is referred to one of the many excellent cook books available. These recipes should be carefully inspected to make sure the food is allowable in

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the diabetic diet. Often, by slight variations, it can be made so without loss of flavour. It will be seen, however, that many foods will be unavailable to the diabetic without essential modification of their constituents and methods of preparation.

In view of the importance of adequate variety in the diet of the diabetic, we are here including the special recipes, which have been developed in the Toronto General Hospital, for the preparation of foods for the diabetic. The food values of each are given, and they are to be substituted in the patient's diet as shown in Chapter V, or as instructed in the tables of food equivalents, Chapter XV.

TABLE OF MEASUREMENTS

Teaspoon	= Tsp.	3 Tsp.	= 1 Tb.
Tablespoon	= Tb.	16 Tb.	= 1 C.
Cup	= C.	4 C.	= 1 Qt.
Few grains	= f.g.	30 Gm.	= 1 Oz.

15 Gm. = ½ Oz. or 1 Tb. liquid.

RULES FOR MEASURING

1. All measures are level unless otherwise specified.

2. To measure a spoonful, take a heaping spoonful, level it off with a knife, even with edge of spoon. For half spoonful cut level spoonful in two, lengthwise. For a quarter spoonful cut half in two, crosswise.

BREAD AND CEREALS

TO WASH BRAN

Buy ordinary feed bran. Sift to rid of fine starch. Fill a cotton sack about one-third full, tie firmly at the top; wash in a vessel of water, changing frequently, or leave under running water—turning and kneading. Wash till water comes

NOTES

quite clear of all starchy appearance. Wring dry, remove from bag by handfuls, squeezing as dry as possible.

Bran may then be either made into wafers, using Recipe 1, or dried in a slow oven, stirring occasionally.

Thoroughly dried bran may be stored or used as in Recipe 2.

BRAN WAFERS—1

6 cups unwashed bran
½ tb. salt
1 tb. each of cinnamon and nutmeg
5 tb. India gum
Hot water

1 grain saccharine may be added

Method—Wash bran and prepare as above. Make sauce of India gum, with just enough water to make a stiff paste, and beat until free of lumps. Combine; add remaining ingredients and knead until mixture is smooth. Spread in thin layers on baking sheets greased with mineral oil. Cut in squares. Bake in slow oven until crisp.

No food value.

BRAN WAFERS—2

6 cups dry washed bran
½ tb. salt
1 tb. each of cinnamon and nutmeg
6 tb. India gum
Hot water

1 grain saccharine may be added if desired

Method—Mix dry ingredients thoroughly; add hot water to make a soft dough. Spread in thin layers on a baking sheet greased with mineral oil. Cut in squares. Bake in a slow oven until dry and crisp.

No food value.

NOTES

BRAN MUFFINS

⅛ cup dry washed bran
½ tsp. baking powder.
1/3 egg
1½ tb. mineral oil.
2½ tb. Cellu flour
f.g. salt
½ tb. India gum
Warm water
Saccharine if desired

Method—Mix dry ingredients thoroughly; add mineral oil, egg and sufficient warm water to make a batter that will drop from the spoon. Bake in small muffin tins in a slow oven till dry. This makes 2 muffins.

Food value: P. 2; F. 2.

CELLU BRAN WAFERS

3 cups dry washed bran
3 tb. India gum
6 tb. mineral oil
1½ cups Cellu flour
3 tsp. baking powder
2 gr. saccharine.
Hot water

Method—Mix dry ingredients thoroughly. Add mineral oil and finish as for bran wafers—may be spread somewhat thicker, 3/8 inch. These may be spiced, flavoured with caraway seeds, or nuts may be added, providing of course, their food value is calculated.

No food value.

CELLU PIE CRUST

¼ cup Cellu flour
2 tsp. India gum
Saccharine
2 tb. dry washed bran
f.g. salt
1½ tb. mineral oil
1½ tb. warm water

Method—Mix as for Cellu bran wafers, adding sufficient warm water to make a dough. Mould in muffin tins. Bake in a slow oven till dry. This recipe makes two pie crusts.

No food value.

NOTES

ALLENBURY'S FLOUR BREAD

1 pkg. Allenbury's flour (60 gm.)
3 eggs
¼ tsp. salt.

Method—Beat egg whites till quite stiff. Fold in the well beaten yolks and slowly add the flour and salt. When well blended turn into an oiled tin and bake in a moderate oven.

Food value of loaf: P. 57.5; F. 22.1.

Food value of 10 grams: P. 3.6; F. 1.4.

DIAPROTEIN BREAD

1 measure Diaprotein flour
f.g. salt
2 eggs
2 tb. water

Method—Beat egg yolks till quite thick; add water and fold into stiffly beaten white of eggs; then carefully add flour. Do not stir or beat. Bake in a moderate oven, increasing heat at the last. Average weight of loaf is 140 grams.

Food value of loaf: P. 43.5; F. 13.5.

Food value of 10 grams: P. 3.1; F. .9.

LISTER FLOUR BREAD

1 pkg. Lister flour
3 eggs
f.g salt

Method—Combine and bake as for Diaprotein bread. Average weight of loaf is 160 grams.

Food value of loaf: P. 59.9; F. 18.3.

Food value of 10 grams: P. 3.7; F. 1.1.

NOTES

DIABAN BREAD

80 gm. milk	1½ gm. sugar
180 gm. Diaban flour	4 gm. butter
4 tb. water	½ yeast cake

Method—Measure sugar and fat into a bowl. Scald milk and pour over the mixture, and when lukewarm add the yeast which has been mixed with the warm water; then gradually add the flour. When all the flour is added and the loaf well kneaded, place in an oiled bread tin, moisten and set in a warm place to rise—loaf will not quite double in size. Bake in a moderate oven. This requires a long, slow baking.

Food value of loaf: P. 47.; F. 51.; C. 34.

Food value of 10 grams: P. 2.; F. 2.; C. 1.5.

NUTRIVOID BREAD

45 gm. Nutrivoid flour	3 eggs
1/3 tsp. salt	½ tb. India gum
2 tb. mineral oil	¼ tsp. baking powder

Method—Beat egg yolks till thick; gradually add the flour to which salt and baking powder have been added. Mix the India gum and mineral oil and add to the beaten mixture; then fold in the stiffly beaten egg whites. Turn into a well greased tin and bake in a moderate oven 45 to 50 minutes.

Food value of loaf: P. 20.3; F. 18.5; C. 2.3.

Food value of 10 grams: P. 1.6; F. 1.5; C. .18.

CHEESE CRACKERS

Grate cheese about ⅛ inch thick on Cellu bran wafers, brown in a moderate oven.

Food value: Cheese may be substituted from the diet list.

NOTES

NUTRIVOID MUFFINS

30 gm. rolled oats
80 gm. Nutrivoid flour
1 tsp. salt
3 tb. mineral oil
1 egg
100 gm. milk
1 tsp. baking powder
2 tb. dry washed bran

Method—Beat egg; add mineral oil; combine dry ingredients and add to the beaten mixture alternately with the milk—if batter is too dry add water to make the desired consistency. Drop into well greased muffin tins, making twelve muffins in all.

Food value of each: P. 1.5; F. 1.1; C. 2.4.

SOY BEAN MUFFINS

100 gm. Soy bean flour
1 tb. mineral oil
½ tsp. salt
1½ tsp. baking powder
2 eggs
15 gm. butter
120 gm. milk
Saccharine

Method—Beat egg yolks; add mineral oil and melted butter. Mix dry ingredients and add to the beaten mixture, alternating with the milk. Fold in the beaten egg whites and bake in oiled muffin tins. Makes eleven muffins.

Food value of each: P. 4.5; F. 4.5; C. 1.5.

BRAN GRIDDLE CAKES

1 cup dry washed bran
1 tsp. baking powder
1 tb. fat
1/3 tsp. salt
1 egg
¼ cup water

Method—Mix dry ingredients; add water and well beaten egg. Drop in spoonsful on a hot griddle greased with mineral oil.

Food value: P. 6.; F. 18.

(If egg and fat are used from diet sheet food values need not be counted.)

NOTES

CELLU GRIDDLE CAKES

4 tb. Cellu flour — ½ tsp. India gum
1/3 tsp. baking powder — 1 egg
¼ cup water — f.g. salt

Method—Prepare as in previous recipe.

Food value: P. 6.; F. 6.

(May be substituted for one egg.)

OATMEAL PORRIDGE

15 gm. Scotch oatmeal (or rolled oats)
¾ cup hot water — ¼ tsp. salt

Method—Weigh amount of oatmeal allowed in the diet into a saucepan; add salt and gradually the hot water, stirring until thick. A tablespoon of washed bran added makes a larger serving and will require additional water in the cooking.

Food value of 15 grams (dry): P. 2.4; F. 1.; C. 10.1.

BRAN CEREAL

¼ cup washed bran — 1 tsp. agar agar
¼ tsp. salt — ½ cup water

Method—Mix dry ingredients, add boiling water and boil ten minutes. If too thick additional water may be added. Serve with cream from the day's allowance.

No food value.

MILK AND EGG DESSERTS

BAKED CUSTARD

1 cup (240 gm.) milk — 1 egg
f.g. salt — Saccharine
½ tsp. vanilla

Method—Beat the egg and add flavouring, salt and saccharine and milk which has been scalded. Pour into three custard cups. Set cups in a pan of hot water and bake in a moderate oven. Custards are done when a knife inserted comes out clean.

Food value of each: P. 4.5; F.5; C. 4.

NOTES

PURITY CUSTARD

1 egg white
1/3 cup (80 gm.) milk
f.g. salt
Saccharine
Vanilla or nutmeg to flavour

Method—Prepare as for baked custard.

Food value: P. 6.4; F. 3.2; C. 4.

FLOATING ISLAND

1 cup (240 gm.) milk
1 egg white
1 egg yolk
1 tsp. flavouring
Saccharine

Method—Combine and cook as for custard sauce, reserving egg white. Turn into three moulds and pile stiffly beaten egg white on top. Set in the oven to brown. (Or egg white may be folded in as in Spanish Cream.)

Food value of each: P. 4.5; F. 5.; C. 4.

SPANISH CREAM—1

Method—Use the same recipe as for baked custard, reserving egg white and adding ¼ tb. agar and ¼ cup boiling water. (Boil agar and water until dissolved.) Combine as for custard sauce, add the strained agar and continue cooking in the top of double boiler till mixture is thick. Cool slightly; fold in the stiffly beaten white of egg and pour into cool wet moulds.

Food value of each: P. 4.5; F. 5.; C. 4.

SAGO PUDDING

10 gm. sago
40 gm. milk
30 gm. cream, 32%
2 tb. water
1 egg white
f.g. salt
Vanilla
Saccharine

Method—Soak the sago in the water for a short period; add milk and cream and cook in top of double boiler until

NOTES

sago is done. Add salt, vanilla and saccharine to taste. Fold in the stiffly beaten egg white. Mould in sherbet cups. This makes two desserts.

Food value of each: P. 2.9; F. 5.3; C. 5.3.

CORNSTARCH PUDDING

60 gm. milk
4 gm. chocolate
3 gm. cornstarch
¼ cup water
1 egg yolk
f.g. salt
1 tsp. India gum syrup
¼ tsp. vanilla
Saccharine syrup

Method—Mix cornstarch to smooth paste with part of the water and gradually add the milk, which has been scalded, with the remainder of the water. Add India gum syrup and cook a few minutes at boiling temperature. Beat egg yolk and add some of the hot mixture to it; return to saucepan. Add the chocolate which has been melted over hot water and cook for a few minutes, adding vanilla and saccharine syrup when cooking is finished.

A part of the cream allowance may be whipped and served with this.

Food value: P. 4.3; F. 10.3; C. 6.9.

JUNKET

1/3 cup (80 gm.) milk
Flavouring
1/12 junket tablet
1 tb. lukewarm water
¼ grain saccharine

Method—Heat milk to blood temperature, or 100 degrees F., and pour on to the junket tablet which has been dissolved in water. Flavour, stir well and pour into a mould. Let stand in a warm place till set, then chill.

Food value P. 2.5; F. 3.; C. 4.

NOTES

BAVARIAN CREAM

1½ tsp. agar	1½ tsp. lemon juice
1 cup boiling water	2 tsp. grated rind of lemon
1 egg white	Saccharine

3 tb. cream (from allowance)

Method—Dissolve agar by boiling in water; strain, add lemon and saccharine. Fold in the beaten egg white and the whipped cream. Mould in three equal portions. Orange juice, or any diabetic flavouring, may be used in place of lemon.

Food value of each: P. 1.3; C. .5.

ORANGE SNOW PUDDING

1½ tsp. agar	3 tb. orange juice
1 cup boiling water	1 tsp. grated orange or lemon rind
1 egg white	Saccharine syrup

Method—Prepare as for Bavarian Cream. Mould in three equal portions. May vary recipe by using lemon juice or any diabetic flavouring.

Food value of each: P. 1.3; C. 1.5.

PUMPKIN PIE

70 to 100 gm. pumpkin	Spices
f.g. salt	Saccharine
1 tb. cream	Egg

Method—To the amount of pumpkin stated in diet add 1 tb. cream from day's allowance, and the white or the yolk of an egg may be added. Season with salt, spices and saccharine. Pour into a "Cellu" crust or custard cup and bake until firm.

Food value: Substitute for equal portions in the diet.

NOTES

COCOA

4 gm. cocoa
2 tb. cold water
¾ cup boiling water
f.g. salt
30 gm. cream, 32%
½ tsp. India gum syrup
¼ tsp. vanilla
Saccharine syrup

Method—Mix cocoa with cold water; add boiling water and boil three minutes. Add cream, India gum syrup, and bring to boiling point. Add vanilla and saccharine just before serving.

Food value: P. .8; F. 1.; C. 1.5. Substituting cream from day's diet.

COTTAGE CHEESE—1

Method—Put one quart of sour skimmed milk in the top of double boiler. Heat until curd separates out. Let stand for a while. Strain through several thicknesses of cheese cloth and drain till dry. Season with salt and pepper and chopped pimento. Cream from day's allowance may be added.

COTTAGE CHEESE—2

Method—To one quart buttermilk add slowly two quarts boiling water. Let stand until curd separates out. Drain and finish as in Cottage Cheese—1.

One may vary Cottage Cheese by adding chopped nut meats, pimentos, cucumbers or parsley and mould into balls. Serve with salad or spread on lettuce leaves or bran wafers for sandwiches.

Unseasoned Cottage Cheese, in place of meat or eggs, makes a delightful breakfast. Serve with cream, to which a little saccharine has been added.

NOTES

FROZEN DESSERTS

GENERAL RULES

Method of freezing—If an individual freezer is not at hand, one may be improvised by the use of a tightly covered baking powder or cocoa can, or a jelly glass, the latter to be used when freezing mixtures containing acids, such as fruit juices. A pail or a large bowl for packing, completes the equipment.

Put mixture to be frozen in container and pack in pail, using three parts ice to one of salt, adding ice and salt alternately till nearly to top of container.

As mixture begins to freeze, with a spoon, scrape frozen portion from sides to centre of container until it is all of the desired consistency. When frozen, repack, using four parts ice to one of salt, and keep in a cool place until ready to serve.

FROZEN CUSTARD

80 gm. milk
1 egg yolk
2 tb. water
f.g. salt
½ tsp. vanilla
Saccharine syrup

Method—Scald milk and water, add to egg yolk slightly beaten. Cook until mixture coats spoon. Add salt, vanilla, and saccharine to sweeten. Cool and freeze.

Food value: P. 4.4.; F. 9.2.; C.4.

CHOCOLATE ICE CREAM

Method—Prepare as above. Melt 4 gm. chocolate in top of double boiler and slowly add the hot custard mixture to it. Cool and freeze.

Food value: P. 4.9; F. 11.1; C. 5.2.

COFFEE ICE CREAM

Method—Prepare as for Frozen Custard, omitting the water for ¼ cup of coffee.

NOTES

VANILLA ICE CREAM

50 gm. milk
½ tsp. vanilla
45 gm. cream, 32%
Saccharine syrup
1tb. India gum syrup

Method—Combine ingredients in order given and freeze (if cream is whipped a better consistency is obtained). May vary this by omitting vanilla for any diabetic flavouring, such as: raspberry, maple, peach, orange or lemon.

Food value 3.3; F. 16.7; C. 5.7.

MOUSSE

60 gm. cream, 32%
Flavouring
½ tb. agar syrup
Saccharine syrup

Method—Whip cream; fold in hot agar syrup; add flavouring and saccharine. Freeze. May use any diabetic flavouring. Coffee or a part of the day's allowance of fruit may be crushed and added to cream before freezing, or it may be served as a sauce with the frozen product.

MILK SHERBET

120 gm. milk
1 tb. India gum syrup
2 tsp. lemon juice
f.g. salt
Saccharine syrup

Method—Combine ingredients in order given and freeze. May vary by substituting any of the diabetic flavourings for the lemon juice.

Food value: P. 3.6; F. 4.8; C. 7.

LEMON SHERBET

60 gm. cream, 32% (or 75 gm. 24%)
1 tsp. lemon juice
Saccharine syrup
2 tb. cold water
f.g. salt

Method—Mix in order given; pack and freeze.

Food value: P. 1.2; F. 18.; C. 2.7.

May be substituted for Cream Soup.

NOTES

ORANGE ICE

50 gm. orange juice	1 tb. grated orange and lemon rind
10 gm. lemon juice	1/3 cup water
Saccharine syrup	1 tb. India gum syrup

Method—Boil grated rind in water; strain; when cool add fruit juice, India gum and saccharine to taste. Freeze.

Food value: C. 6. gm.

May substitute for 60 gm. 10% fruit in the diet. May vary this by substituting grapefruit or water-canned fruits, such as raspberries, peaches, pineapple, etc.

An egg white may be beaten stiff and folded in when mixture is about half frozen.

Food value: P. 4.; C. 6.

GELATIN DESSERTS

GENERAL RULES

1. Do not boil gelatin.
2. Soften in cold water.
3. Dissolve in boiling water.
4. Before filling mould rinse in cold water.
5. Set gelatin in a cool place to harden.

GELATIN DESSERT

2 gm. gelatin	½ cup liquid
1 tb. cold water	¼ grain saccharine

Flavouring

Method—Soak gelatin in cold water. Add a part or all of the liquid, which has been heated to boiling point, and stir until gelatin is dissolved. Add remaining ingredients and set in a cool place until firm.

NOTES

Food value: May use the allowance of fruit calculated in diet, either as juice or as fruit with water added, or water flavoured with any of the diabetic flavourings. Cream from the allowance may be whipped and served with this.

P. 1.8.

BLANC MANGE

2 gm. gelatin
2 tb. cold water
80 gm. milk
15 gm. cream
1 clove
½ inch stick cinnamon
f.g. salt
¼ tsp. vanilla
Saccharine syrup

Method—Soak gelatin in cold water. Scald milk, cream, clove, cinnamon and salt; pour on to gelatin mixture and stir until dissolved. Add saccharine and vanilla; strain into sherbet cup and set in a cool place until firm.

Food value: P. 4.5; F. 7.7; C. 4.5.

SNOW PUDDING

3 gm. gelatin
1 tb. cold water
2/3 cup boiling water
1 egg white
3 tb. lemon juice
1 tsp. grated lemon rind
Saccharine syrup

Method—Soak gelatin in cold water. Boil grated rind with water and add to the gelatin mixture; stir until dissolved. Add the lemon juice and saccharine. Strain and set in a cool place until thick and jelly-like, then beat until frothy. Fold in the stiffly beaten egg white and continue beating till stiff enough to hold its shape. Pour into three moulds and keep in a cool place until ready to serve.

Food value of each: P. 2.3; C. 1.5.

Serve with Custard Sauce.

NOTES

SPANISH CREAM—2

3 gm. gelatin	1 tsp. vanilla or sherry
100 gm. boiling water	1 tb. cold water
140 gm. milk	1 egg yolk
15 gm. cream, 32% (or 20 gm. 24%)	1 egg white

Saccharine syrup

Method—Soak gelatin in cold water. Dissolve in boiling water and add to custard sauce made from egg yolk, milk and cream. Strain, flavour and cool. Fold in stiffly beaten egg white and mould at once in three equal portions.

Food value of each: P. 4.2; F. 5.3; C. 2.5.

COFFEE CREAM

1.5 gm. gelatin	1 egg
5 tb. coffee	60 gm. cream
Saccharine syrup	60 gm. hot water

Method—Soak gelatin in coffee; add boiling water, stir till dissolved. Add the beaten egg yolk, then the cream, whipped, and lastly fold in the stiffly beaten egg white. This recipe makes two desserts.

Food value of each: P. 4.2.; F. 12.; C. 1.

JELLY DESSERT

1 pkg. D. Zerta	½ cup boiling water
10 gm. almonds	20 gm. 10% fruit

Method—Empty contents of package into a bowl and pour boiling water over it. Stir until dissolved. Line a mould with fruit and pour jelly over it. Set in a cool place till firm. The nuts may be chopped and served over the top with part of the cream allowance whipped, or they may be salted and served separately, or with the salad.

Food value: P. 4.1; F. 5.4; C. 3.7.

NOTES

JELLY WHIP

Follow recipe for Jelly Dessert; when jelly begins to set beat and fold in 1 tb. whipped cream from allowance. Nuts may be served as desired.

CRANBERRY JELLY

2 gm. gelatin
1 tb. cold water
60 gm. cranberries
Saccharine syrup
2 tb. boiling water

Method—Soak gelatin in cold water and dissolve in boiling. Add cranberries which have been cooked and put through a sieve. Turn into a mould and set in a cool place.

Food value: P. 1.8: C. 6.

Note:—One half teaspoon of agar agar syrup may be substituted for the gelatin.

Food value: C. 6.

SAUCES

CUSTARD SAUCE—1

1 cup (240 gm.) milk
1 egg yolk
Saccharine
1 tsp. flavouring

Method—Combine as for Baked Custard. Cook in the top of double boiler until mixture coats the spoon; remove, add saccharine and flavouring. Make into three equal portions.

Food value of each: P. 3.1; F.5.2; C. 4.

CUSTARD SAUCE—2

1 egg yolk
4 drops saccharine syrup
20 gm. cream, 32% (or 25 gm. 24%)
120 gm. milk (½ cup)
½ tsp. vanilla.

Method—Pour scalded milk and cream over beaten egg yolk and cook over boiling water till mixture coats the spoon. Strain and flavour. This makes three servings.

Food value of each: P. 2.1; F. 5.6; C. 2.2.

NOTES

BUTTER SAUCE

1 tb. butter — 1/8 tsp. salt
1 tsp. lemon juice — 1 tsp. paprika
1 tsp. chopped parsley

Method—Cream butter and add seasoning, lemon juice and parsley. May vary this by adding 1 tsp. horseradish or capers.

Serve with fish, steaks or chops.

Food value: Substitute butter from diet.

CUCUMBER SAUCE

Grate cucumber. Add chopped pimento, salt, pepper and teaspoon vinegar. Serve with fish.

Food value: Substitute for an equal portion 5 per cent. vegetable in the diet.

HORSERADISH SAUCE

10 gm. horseradish, grated — 1 tsp. vinegar
Salt and pepper — Saccharine

Method—Combine ingredients in order given. A teaspoonful of whipped cream from one's allowance may be added, if desired.

Food value: C. 1. gm.

MINT SAUCE

1 tb. vinegar — Few drops saccharine liquor
2 tsp. chopped mint leaves

Method—Combine ingredients and let stand at room temperature until mint flavour has penetrated the liquid.

No food value.

WHITE SAUCE

To 45 grams cream add water to make one-third of a cup and India gum syrup to thicken (2 to 3 teaspoonsful). Season with salt and pepper. Serve with vegetables, meats, etc.

Food value: Substitute cream for equal portion in the diet.

NOTES

CREAM SAUCE

½ tsp. India gum
f.g. salt and pepper
Chopped parsley
3 tb. hot water
Few drops onion juice
Cream or milk from allowance

Method—Measure gum into bowl and add hot water. Cream with a spoon till consistency of a soft jelly. Add cream or milk and seasoning. Heat and serve over fish, meats, or vegetables as desired.

Food value: Substitute cream from the diet.

ORANGE SAUCE

½ cup water
½ tsp. India gum
½ tsp. grated orange rind
30 gm. orange juice
Saccharine

Method—Boil water, grated rind, and India gum for a few minutes. Add orange juice, saccharine to sweeten, and strain. If diet does not permit of orange juice use diabetic orange extract.

Food value, using orange juice: C. 3. gm.

TOMATO SAUCE

Strain, weigh and cook 50 grams tomatoes with one slice of onion, one clove, one bay leaf, salt and pepper, for five minutes. Remove onion and clove and add India gum syrup to make the desired consistency. Serve with fish, meats, etc.

Food value: Substitute for equal portion of five per cent. vegetable in the diet.

NOTES

MISCELLANEOUS—NON-NUTRIENTS

AGAR SYRUP

¼ cup agar agar 2 cups boiling water

Method—Boil till dissolved; strain and add enough hot water to make two cups syrup. This may be used fresh or allowed to cool and set and be re-dissolved over boiling water, for thickening cream sauces, gravies, soups, cocoa made from cocoa shells, etc.

No food value.

INDIA GUM SYRUP

Two teaspoons India gum may be made into a syrup with three-quarters of a cup of hot water and mixture used as Agar Syrup for thickening purposes.

No food value.

SACCHARINE SYRUP

1 oz. saccharine powder 1½ cups cold water

Method—Put saccharine and water in a bottle and shake occasionally until saccharine is dissolved. This is a more convenient way of using saccharine. Do not add saccharine to food until cooking is finished.

N.B.—One tablespoon solution equals one cup sugar in sweetening power; a few drops are sufficient for sweetening a dessert.

MAPLE SYRUP SUBSTITUTE

1 tb. agar agar or India gum syrup
Saccharine to sweeten 1/3 tsp. maple extract
Hot water

Method—Dilute syrup with boiling water to the desired consistency; strain and add saccharine and flavouring.

No food value.

NOTES

COCOA

1 cup cocoa shells
1 qt. water
1 tsp. vanilla
Saccharine

Method—Add water to cocoa shells and let simmer for several hours, adding water to make up loss. Strain, flavour, and add milk or cream from allowance. A teaspoon of agar or India gum syrup gives a better consistency.

AGAR JELLY

2 tb. agar
4 cups boiling water
1 tsp. citric acid
Saccharine syrup
Flavouring
Colouring

Method—Add water to agar and boil until dissolved. Remove from fire, add saccharine to sweeten, colouring and flavouring. Grated rind of orange, lemon, or any of the diabetic flavourings, such as maple, peach, raspberry or pineapple, may be used. Coffee or cocoa infusion may be used, omitting one cup of water for one cup of either the coffee or cocoa. Strain into tins and let stand until set. When ready to serve cut in inch squares. Citric acid and colouring may be omitted.

No food value.

SALADS

For the diabetic who lives at a distance from the city market where green vegetables are procurable throughout the year, the provision of materials with which to make a salad often becomes a difficult problem.

Cabbage can be obtained throughout the winter months, and readily lends itself to many combinations. It may be substituted for lettuce and other salad vegetables

Cut the stem end from a small firm head of cabbage, place in a bowl of cold water and allow to stand for several hours.

NOTES

The leaves will become fresh and crisp. The inner and more tender ones may be shredded and used as a salad alone, or combined with other vegetables, such as celery, beets, cucumber, carrots, string beans, etc., or again it may be used as a "bed" on which to serve salad foods.

SUGGESTIONS FOR SALAD COMBINATIONS

Fruit	
Apple, celery and nuts	
Apple, celery and pineapple	*Dressing*
Grapefruit and lettuce	Boiled or
Orange and watercress	Mayonnaise
Pineapple with cottage cheese balls	
Pineapple, orange and pears (water canned)	
Pear	
Pear, half-fill with chopped fruit	

Vegetables	*Dressing*
Asparagus	French
Cabbage, shredded	or
Cabbage shredded with celery or nuts	Mayonnaise
Diced celery and radish	
Cucumber and green pepper	
Sliced tomato	
Sliced tomato with watercress	
Tomato stuffed with celery and cucumber or string beans	
Peas and beets or carrots	
Spinach with hard cooked egg	

Cheese	*Dressing*
American or cottage cheese balls with nuts	Boiled,
Celery stuffed with cheese	French, or
Peppers stuffed with ground cheese and celery	Mayonnaise

NOTES

Fish	*Dressing*
Crabmeat with celery	French
Lobster with celery and tomato	or
Tuna fish with celery	Mayonnaise
Salmon with asparagus tips	
Shrimp with celery	
Tomato stuffed with any of these combinations	
Sardines with shredded cabbage	

Meats	*Dressing*
Chicken with celery	Mayonnaise
Turkey with celery	
Pepper stuffed with ground ham and celery	

The above suggestions are only a few of the various combinations that may be made, using the 5 per cent. and 10 per cent. vegetables as a basis.

CHICKEN SALAD

Cube, or cut shoestring fashion, cold boiled chicken; add an equal amount of celery cut in the same way; moisten with diabetic mayonnaise and serve on a bed of lettuce. Garnish with capers, slices of pickle and curled celery.

Food value: Substitute portions of chicken and celery from the day's diet.

Lobster, shrimp or salmon salads may be prepared in the same way.

CAULIFLOWER SALAD

Cook cauliflower, drain and cool. Serve on lettuce with a French dressing mixed with one teaspoon curry powder, a quarter teaspoon mustard and one teaspoon lemon juice, parsley and a dash of paprika.

Food Value: Substitute for equal portions in day's diet.

NOTES

CELERY AND ARTICHOKE SALAD

Cut celery and about one-half as much artichoke in long thin strips (canned artichokes may be used). Serve on bed of lettuce with French or mayonnaise dressing.

Food value: Use celery and oil from day's diet.

LETTUCE SALAD

10 gm. raw bacon	50 gm. lettuce
2 tb. vinegar	Seasoning

Cube bacon and fry brown. Add vinegar, diluted to the desired strength, and seasoning. Pour over crisp lettuce and serve.

Food value: P. 1.; F. 6.; C. 1.5.

STUFFED BEET SALAD

Boil beets until tender; drain, add cold water and remove skins. Cover with vinegar, diluted to taste; season. Let stand over night. Remove centre; cube portion removed and add equal portion of cubed celery or shredded cabbage; mix with mayonnaise and refill cavity. Remainder of beets thus prepared may be sliced and served as a 10 per cent. salad vegetable.

STUFFED CELERY

Weigh celery and cut in two or three inch lengths. Grate cheese; season and moisten with mayonnaise; fill celery stalks. Cottage cheese may be used in the same way.

Food value: Substitute for portions in the diet.

TOMATO ASPIC

100 gm. tomatoes	20 gm. celery
1 bay leaf	10 gm. onion
3 gm. gelatin	2 tb. cold water

Method—Cook tomatoes, bay leaf and celery. Soak gelatin in cold water and strain the boiling liquor from the cooked

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vegetables over it; stir until gelatin is dissolved. Pour into a mould and set in cool place until firm. Serve on crisp lettuce as salad.

Food value: P. 2.7 gm.; C. 3 gm.

STUFFED TOMATO SALAD

Select a firm, smooth tomato; remove core. Place on bed of lettuce. With a knife remove large cone-shaped centre and place at side of tomato. Fill cavity with any chopped 5 per cent. vegetable, or a mixture of five per cent. vegetable. Add teaspoonful mayonnaise.

Food value: Substitute for an equal portion of 5 per cent. vegetable in the diet.

SANDWICH—LETTUCE

Use cottage cheese or any cheese grated. Almonds or English walnuts may be chopped fine and added to the mixture. Spread on large leaves of lettuce; roll and fasten with a tooth pick. Chill, remove tooth pick when ready to serve. (May be spread on thin bran wafers.) Ham, chicken, salmon, sardines, and eggs may be minced, seasoned with sweet pepper, either raw or canned, or chopped olive, and served in the same way.

WALDORF SALAD

35 gm. apple — 20 gm. lettuce
30 gm. celery — 3 gm. walnuts
Diabetic mayonnaise

Method—Cube apple and celery; add mayonnaise and serve on lettuce. Chop walnuts and sprinkle over top. Garnish with strips of pimento.

Food value: P. .5; F. 1.9; C. 7.

May substitute in diet for 70 grams 10 per cent. fruit, omitting 2 grams butter.

NOTES

SALAD DRESSINGS AND RELISHES

BOILED SALAD DRESSING

120 gm. milk (½ cup)
10 gm. butter
2 tb. vinegar
1 drop saccharine syrup
¼ tsp. paprika
1 tsp. mustard
1 egg
½ tsp. salt

Method—Add dry ingredients to egg and beat well. Add scalded milk and cook in the top of double boiler until mixture coats the spoon; remove, add saccharine and seasoning, butter, vinegar (slowly); strain and cool.

Food value of one tablespoonful: P. .7; F. 1.3; C. .4.

By omitting one gram of butter, one tablespoonful may be used without altering diet. If desired add one teaspoon India gum syrup to thicken.

FRENCH DRESSING

½ tsp. salt
4 tb. oil (mineral or salad)
2 tb. vinegar
⅛ tsp. pepper
Dash paprika

Method—Mix ingredients and beat until well blended.

Food value: Mineral oil, none; salad oil, fat 60 grams.

DIABETIC MAYONNAISE

1 egg
2½ cups mineral oil
1 tsp. salt
1 tb. mustard
2 to 4 tb. vinegar
1 tsp. paprika

Method—Beat egg; add dry ingredients; continue beating, slowly adding oil. When half oil is added add vinegar and oil alternately. Dressing should be quite stiff when finished.

Food value: P. 6.; F. 6.

Served in ordinary quantities food value is negligible.

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MAYONNAISE

2 egg yolks	1½ cup olive oil
1 tsp. salt	1 tsp. mustard
¼ tsp. paprika	4 tb. vinegar

Method—Beat egg yolks until thick; add dry ingredients. Add oil drop by drop and continue beating; as mixture thickens add oil and vinegar alternately. Oil added too quickly may cause curdling of mixture. Oil should be thoroughly chilled before starting mayonnaise.

Food value of 10 gm.; F. 10. gm.

RUSSIAN DRESSING—MAYONNAISE DRESSING

To one-half cup of either of the above mayonnaise dressings add 1 teaspoon chopped green pepper, 1 tablespoon tomato, 2 teaspoons onion, 1 tablespoon celery, 1 teaspoon Worcestershire sauce, 1 tablespoon chives and capers.

BEET RELISH

1 cup cooked beets	2 tb. horseradish
2 tb. vinegar	1 tsp. salt

Method—Cube beets and add other ingredients. Put in a sealer and keep in ice chest. Serve with cold meats.

Food value: Substitute for equal portions 10 per cent. vegetable in the diet.

TOMATO RELISH

½ gal. green tomatoes	½ gal. cabbage
1 qt. onions	1 doz. green peppers
	½ doz. red peppers

Method—Chop and mix all together, and cover with water. Add one cup salt and allow to stand over night. Then pour into a muslin bag and drain for twenty-four hours. Turn into a kettle and add one cup white mustard seed and one-half

NOTES

gallon boiling hot vinegar, diluted to taste. Cook all together for twenty minutes. Pack in sterile jars and seal, or put jars in hot water bath and process for required length of time. When opened for use may add one-half teaspoon liquid sweetening to each jar.

Food value: Substitute for an equal portion of 5 per cent. vegetable in the diet.

GREEN TOMATO PICKLE

4 qts. green tomatoes
½ doz. small onions
½ doz. green peppers

Slice and put in a wooden bowl or an enameled pan; sprinkle with salt and let stand over night. Drain well. Mix:

1 qt. vinegar
1 tb. mustard seed
1 tb. cloves
1 tb. pepper
1 tb. celery seed
1 tb. allspice
1 tb. cinnamon

Bring the vinegar and spices to a boil. (Additional salt may be added if needed). Add vegetables; boil for twenty minutes. Pack in sterile jars and seal.

Food value: Substitute for an equal portion of 5 per cent. vegetable in diet.

CHILI SAUCE

24 ripe tomatoes
6 green peppers
6 onions
4 tb. salt
3 tb. ginger
2 tb. cinnamon
2 tb. mustard
3 cups vinegar
1 cup water

Method—Remove skin from tomatoes and onions, the cap and seeds from peppers, and chop all very fine. Add remaining ingredients and cook for two and a half to three hours. This may be bottled and sealed.

Food value: Substitute for an equal portion of 5 per cent. vegetable in the diet.

NOTES

VEGETABLES

TIME TABLE FOR COOKING

Asparagus	20 : 30 minutes	Egg Plant	30 minutes
Beets (young)	45 minutes	Green Peas	30 : 45 minutes
Beets (old)	3 : 4 hours	Onions	45 : 60 minutes
Cabbage	30 : 45 minutes	Parsnips	30 : 40 minutes
Carrots	35 : 40 minutes	Spinach	15 : 20 minutes
Cauliflower	20 : 30 minutes	String Beans	1 : 3 hours
Celery	20 : 30 minutes	Summer Squash	20 : 30 minutes
Tomatoes	20 : 30 minutes	Turnips	30 : 45 minutes

GENERAL RULES

1. Buy vegetables in season.
2. Buy medium sized vegetables.
3. Wash thoroughly in cold water (if wilted allow to stand in cold water until freshened), then pare or scrape if skins are to be removed.
4. Green vegetables should be cooked in small amounts of salted water—one teaspoon to a quart of water.
5. Strong flavoured vegetables—cabbage, cauliflower, onions, turnips—should be cooked uncovered in a large amount of water.
6. Spinach may be cooked in a covered vessel without the addition of water.
7. Vegetables should be cooked only until tender, then drained.
8. After the portion is weighed a part of the butter or cream from the day's allowance may be added.
9. Cold cooked vegetables may be used for salads or re-heated and served with a white sauce.

NOTES

THRICE COOKED VEGETABLES—5%

Method—Prepare the vegetables in the usual way. Place in cold water for half an hour. Drain, add fresh cold water and boil five minutes. Repeat this twice; the last time cooking until vegetables are tender. Vegetables may be re-heated in a little broth or seasoned with meat extract or vegex. Five per cent. vegetables prepared in this way have little or no food value.

BROILED TOMATOES

Method—Wipe and cut tomatoes in half inch slices. Weigh, season with salt, pepper and chopped parsley, and sauté in hot mineral oil or bake twenty to thirty minutes in a hot oven. If the diet permits, butter may be used instead of mineral oil.

Food value: Substitute for equal portions in the diet.

STUFFED TOMATOES OR PEPPERS

Method—Chop fine or grind the allowance of ham, veal or chicken, and 60 to 80 grams of celery and cabbage, 20 grams carrots and onion. Season with salt and pepper; mix well and moisten with broth. Remove top from tomato or pepper, scoop out centre, weigh and fill with mixture. Put in pan greased with mineral oil and bake in a hot oven twenty to thirty minutes.

Food value: Substitute for equal portions in the diet.

FRIED EGG PLANT

Method—Pare egg plant and cut in one-fourth inch slices; sprinkle with salt and cover with a weight to press out the juice, and let stand one hour. Dredge with Cellu or Nutrivoid flour and fry in mineral oil.

Food value: Substitute for equal portion in the diet.

NOTES

STUFFED CARROTS

Method—Pick short thick carrots; scrape and boil till nearly tender. Cool. With a knife scoop out a cavity from one side of carrot. Chop 20 : 30 grams of onion, depending on size of carrot; season with salt, pepper, parsley and vegex, or a meat extract may be added, and refill cavity. Pour over enough broth to keep moist. Bake in hot oven thirty minutes. Beets may be prepared in the same way, using spinach or celery with a little onion to fill cavity.

Food value: Substitute for an equal portion of 10 per cent. vegetable in the diet.

CELERY CROQUETTES

80 gm. cooked celery
10 gm. onion, minced
2 tb. water
2 tsp. India gum syrup
1 egg yolk
2 tb. cream
½ tb. butter
Salt and pepper

Method—Brown onion in fat and add India gum syrup. Stir until smooth; add liquids, seasoning and celery. Cook for a few minutes; add the beaten egg yolk. Mould into shape, roll in Nutrivoid or Cellu flour and brown in oven.

Food value: Substitute for equal portions in the diet.

CURRIED CELERY

1 tb. cream
15 gm. onion
⅛ tsp. pepper
60 gm. celery
¼ tsp. salt
1 tsp. curry powder
3 tb. water

Method—Cook celery and onion till tender and until little liquor is left. Add seasoning, re-heat and serve.

Food value: Substitute for 100 grams 5 per cent. vegetable in the diet.

NOTES

BAKED CAULIFLOWER

Baked cauliflower makes an appetizing dish for a cold day. Boil the cauliflower; drain and weigh out portion. Put in baking dish and pour over white sauce. Brown in a hot oven—if the diet permits of it grate 10 : 15 grams cheese over top of white sauce.

Cabbage may be prepared in the same way.

Food value: Substitute for equal portions in the diet.

SPINACH BAKED

Weigh 100 grams cooked spinach; drain and chop fine; season with salt and pepper. Put a teaspoon of butter in a frying pan, add the spinach and heat. A tablespoon of cream and a beaten egg yolk may be added to this and the mixture turned into a casserole and baked for twenty minutes.

Food value: Substitute for equal portions in the diet.

SAUTED SPINACH

Heat one tablespoon of butter in an omlet pan. Add the allowance of spinach, chopped fine, and cook for five minutes. If the diet does not permit of butter being used mineral oil may be substituted.

Food value: Substitute for equal portions in the diet.

BAKED MUSHROOMS

Wash, remove stems, and peel caps. Put mushrooms in an oiled casserole, season with salt and pepper. Add a teaspoon of butter and 60 grams of cream. Bake fifteen minutes in a hot oven.

Food value: Substitute butter and cream for equal portions in the diet.

NOTES

SAUTÉD MUSHROOMS

Wash mushrooms, remove stems, and peel caps. Put a tablespoonful of mineral oil into a hot omelet pan. Add mushrooms which have been seasoned with salt and pepper and dredged in Cellu flour. Cook three to five minutes, or until well browned.

Mushrooms are a pleasing addition to the diet, in that they add bulk. Served with steaks, chops, etc., they enlarge otherwise small servings.

No food value.

SOUPS

BROTH

1 lb. meat and bone 4 cups cold water

Method—Chop meat and bone; soak half an hour in cold water. Simmer two to three hours in the same water. Strain and when cold remove fat.

Food Value. Broth thus prepared has little or no food value.

VEGETABLE SOUP

1 cup broth 40 gm. 5% vegetable
30 gm. 10% vegetable ¼ tsp. chopped parsley
Salt and pepper

Method—Cube vegetables or cut in long thin strips as for "Julienne" and cook in broth until tender.

Food value: C. 3 gm. Substitute for an equal portion of vegetable in the diet.

TOMATO SOUP

100 gm. tomatoes Bit of bay leaf
¼ cup broth 1 clove
Salt and pepper

Method—Combine ingredients and boil for twenty minutes. Strain and serve.

Food value: Substitute for an equal portion of 5 per cent. vegetable.

NOTES

JELLIED TOMATO BOUILLON

To 60 gm. tomato juice add one-third cup broth, one clove, one bay leaf, half teaspoon agar, salt and pepper, and boil until agar is dissolved. Strain into a wet mould and let stand in a cool place. When firm, cut in cubes and serve in a bouillon cup with a tablespoon of whipped cream.

Food value: Substitute for equal portions of 5 per cent. vegetable in the diet.

MILK SOUP

80 gm. milk — 1/3 egg yolk
¼ cup broth — 5 gm. corn
Salt and pepper

Method—Heat milk and broth; add to beaten egg yolk. Add seasoning and serve.

Food value: P. 3.; F. 5.2; C. 4.9.

CREAM SOUP

50 gm. 5% vegetable — 60 gm. cream, 32%
¼ cup broth — Salt and pepper

Method—Make a puree of vegetables or chop fine, add broth, cream and seasoning; then heat.

Food value: Substitute for equal portions in the diet.

FRUITS AND NUTS

TWICE-COOKED APPLES

Method—Peel and cut sour apples into eighths; add one pint cold water to each apple, and heat to the boiling point. Drain; add cold water and allow to boil again. Drain and finish cooking in top of double boiler. Flavour with saccharine and lemon or cinnamon.

Food value: Substitute for an equal portion of 10 per cent. fruit in the diet.

NOTES

DRIED PEACHES

Soak peaches over night in large amount of cold water. Drain and return to sauce pan; add water to cover and cook until tender. Remove from stove and add saccharine to sweeten.

Food value: Substitute for an equal portion of 10 per cent. fruit in the diet.

STEWED PRUNES

Split the prunes and remove seeds. Soak over night in large amount of cold water. Drain in a collander and wash in cold water; return to sauce pan, add water to cover and cook until tender. A slice of lemon, a stick of cinnamon and a clove or two may be added when cooking.

Food value: Substitute for an equal portion of 10 per cent. fruit in the diet.

PRUNE WHIP

40 gm. prune pulp, 10%	1 egg white
Saccharine syrup	1 tsp. lemon juice
½ tsp. vanilla or sherry	15 gm. cream, 32%

Method—Use prunes prepared by the above method, or any 10 per cent. fruit. Press fruit through a fine sieve, weigh, add lemon, saccharine to sweeten, and flavouring. Fold in cream whipped, and the stiffly beaten egg white.

Food value: P. 4.3; F. 4.5; C. 4.5.

Twenty grams banana may be substituted for the forty grams 10 per cent. fruit.

QUINCE MARMALADE

Wipe quinces, remove stem and blossom ends, quarter, put in kettle and add water to nearly cover. Cook until fruit is tender. Press through a fine sieve. Boil 40 : 50 minutes. Measure and add one quarter as much orange peel (which has

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also been cooked and put through the sieve) and again bring to the boiling point. Can in sterile jars.

Food value: Substitute for an equal portion of 5 per cent. fruit.

QUINCE HONEY

Peel and grate six quinces; add one and a half cups water. Cook 30 : 40 minutes. Measure and add one quarter as much cooked orange peel. Remove from fire and add saccharine to taste. This should be about the consistency of honey. Can in sterile jars.

Food value: Substitute for an equal portion of 5 per cent. fruit.

TO BLANCH ALMONDS

Shell almonds and cover with boiling water; let stand two or three minutes; drain; cover with cold water and rub off skins. Dry between towels.

SALTED ALMONDS

Fry blanched almonds in mineral oil until nicely browned, stirring and turning with a fork continually. Drain on brown paper. Sprinkle with salt.

MACAROONS

1 egg white 10 gm. blanched almonds
¼ grain (or a few drops of liquid) saccharine

Method—Beat egg white stiff; fold in the nuts chopped fine; add saccharin. Drop in spoonfuls on waxed paper and brown in a moderate oven.

Food value: P. 6.1; F. 5.4; C. 1.7.

This recipe makes four macaroons.

Food value of each: P. 1.5; F. 1.3;; C. .4.

Ten grams of California walnuts may be used instead of almonds.

Food value of each: P. 1.4; F. 1.6; C. .3.

NOTES

PEANUT COOKIES

1 egg	30 gm. butter
20 gm. milk	1 tsp. mineral oil
½ tsp. baking powder	30 gm. Soy Bean flour
½ gr. saccharine	1 lemon (grated rind)
10 gm. peanuts	1 tsp. lemon juice

Method—Cream butter, add mineral oil and beaten egg yolk. Combine dry ingredients and add to the mixture, alternating with milk. Then add the grated rind, lemon juice and the chopped nuts. Fold in the stiffly beaten egg white. Drop in twelve equal portions on an oiled baking sheet, and bake in a moderate oven.

Food value: P. 20.1; F. 42.1; C. 6.4.

Food value of each: P. 1.6; F. 3.5; C. .5.

DROP COOKIES

1 egg	1 tb. mineral oil
1 tsp. lemon juice	20 gm. Nutrivoid flour
¼ gr. saccharine	¼ tsp. baking powder
15 gm. walnuts	¼ tsp. salt

Method—Beat egg yolk; add oil and flavouring. Combine dry ingredients and gradually fold into the beaten mixture. Chop walnuts and add. Then fold in the stiffly beaten egg white. Drop in eight equal portions on an oiled baking sheet and bake in a moderate oven.

Food value: P. 9.; F. 16.6; C. 2.1.

Food value of each: P. 1.1; F. 2.; C. .26.

NOTES

PLUM PUDDING

10 gm. raisins
2 tsp. grated lemon rind
2½ tb. mineral oil
¼ tsp. nutmeg
¼ tsp. cloves
1 egg yolk
5 tb. cooked orange peel
½ tsp. India gum
½ tsp. salt
¼ tsp. allspice
¼ tsp. cinnamon
¼ gr. saccharin

Method—Mix dry ingredients; add mineral oil, egg yolk, peel, and chopped raisins. Steam thirty to forty minutes. Serve with orange sauce.

Food value: P. 2.; F. 6.; C. 7.6.

EGGS

Eggs form a very useful and important part of the diabetic diet. They may be preserved at a season when they are plentiful and kept for use during the winter months. The shell of the egg is porous and any method of preservation is based on the exclusion of air: this may be accomplished in a variety of ways, such as coating with paraffin oil, immersion in salt or water glass solution, etc. The water glass solution is perhaps the most popular method. Eggs furnish protein and fat and are, therefore, a substitute for meat. The white is nearly pure protein, containing about four grams. The yolk contains some protein and all the fat found in the egg (2 grams protein and six of fat), making a total of six grams of protein and six grams of fat in the whole egg.

NOTES

CURRIED EGGS

2 hard cooked eggs
1 tb. butter
¼ tsp. chopped onion.
½ tsp. curry powder
½ tsp. salt
60 gm. cream

Method—Melt butter, add seasoning, and cream diluted with water to one-half cup. Add India gum syrup to thicken slightly. Cut eggs in eights, lengthwise, and keep hot in sauce till ready to serve.

Food value May use eggs, butter and cream from the diet.

EGGS BAKED WITH CHEESE

Break eggs into a casserole which has been greased with butter or mineral oil, dust with salt, pepper; add one tablespoon of cream and one of water and a dash of paprika. Grate ten to twenty grams cheese over the top and bake in oven, in pan of water, until eggs are of a jelly-like consistency.

Food value: Use portions of foods from the day's allowance.

EGGS BAKED WITH TOMATO

Take a medium sized tomato, scoup out centre, weigh, break an egg into it, season with salt and pepper. If the day's butter allowance permits add one teaspoon butter. Place tomato in baking dish and bake in moderate oven until egg is of jelly-like consistency. A little broth may be added to keep the tomato moist. The egg may be taken from the day's diet and the weight of the tomato deducted from the allowance of 5 per cent. vegetables.

EGG WITH TOMATO SAUCE

50 gm. tomato
15 gm. minced ham
1 egg
1 tb. chopped mushrooms

Method—Mix ham and mushrooms and heat. Turn on to a hot plate. Poach egg and serve on top of this. Heat tomato,

NOTES

season with salt, pepper and Worcestershire sauce and pour over egg.

Food value: Use portions of foods from the day's allowance.

FOAMY OMELET

2 eggs	2 tb. water
1 tsp. fat	⅛ tsp. salt

Method—Beat egg yolks until light, add salt and water. Fold in stiffly beaten egg whites. Melt fat in omelet pan, turn in mixture and cook slowly until nicely browned underneath. Place in oven a few minutes to finish cooking. Fold, turn on hot platter and serve. Ten or fifteen grams cheese grated and added to the beaten yolks makes a pleasing variation.

Food value: Use portions of foods from the day's allowance.

SCRAMBLED EGGS WITH TOMATO

2 eggs	50 gm. tomatoes
1 tsp. butter	1 slice onion
f.g. pepper	⅛ tsp. salt

Method—Fry onion in butter in omelet pan. Remove onion; add tomatoes, seasoning and eggs slightly beaten, and proceed as for scrambled eggs (Page 103). Mushrooms or asparagus may be substituted for the tomatoes.

Food value: Use portions of foods from the day's allowance.

SOFT 'BOILED' EGGS

Place eggs in sauce pan; pour over them one cup boiling water to each egg. Cover and remove to back of range where water will not boil. Let stand six to eight minutes for soft egg, forty-five minutes for hard boiled; or may cook by placing in cold water and bringing just to the boiling point for soft cooked eggs.

NOTES

SCRAMBLED EGGS

2 eggs	2 tb. water
1 tb. cream	⅛ tsp. salt
f.g. pepper	1 tsp. butter

Method—Beat eggs slightly. Add liquid and remaining ingredients, melt butter in omelet pan and pour in mixture. Cook until of creamy consistency, scraping from sides of pan to center as eggs are cooking.

Food value: Use eggs, butter and cream from day's diet. Mineral oil may be substituted for butter.

May vary this by omitting one egg and substituting its value in minced ham, cheese, or serve with grilled sardines.

EGG STUFFED WITH SARDINES

Hard cook eggs; cut in halves; remove yolk. Bone sardines; mix to a paste with egg yolks. Add mineral oil dressing to moisten. Mix and refill halved whites. Serve with a salad vegetable.

Food value: Use portions of foods from the day's allowance.

SEA FOOD

OYSTERS

Oysters, clams, scallops are in season from September to May. They must be fresh when used, otherwise they are not safe food. They all contain protein, a little fat, and some carbohydrate.

Method of preparation—Put oysters in collander and drain, saving the liquor. Wash oysters in half cup of water to rid of any bits of shells; return oysters to liquor.

NOTES

OYSTER STEW

100 gm. oysters (½ doz.) Salt and pepper
60 gm. cream, 32% Butter

Method—Add water to cream to make half cup and heat. Cook oysters in their liquor until edges begin to curl and combine with hot cream mixture. Add seasoning and serve in a hot dish.

Food value of oysters: P. 6.2; F. 1.2; C. 3.7.

Substitute cream and butter for equal portions in the day's diet.

FRIED OYSTERS

Drain oysters and roll in Cellu or Nutrivoid flour. Fry in hot mineral oil. Drain on soft brown paper. Serve with horseradish sauce.

BAKED OYSTERS

Scrub half a dozen oysters in shell; open; leave oysters in deep half of shell. Arrange on a pan containing one-third inch rock salt. Season oysters with salt, pepper, melted butter and finely chopped parsley. Place in oven and bake until oysters are lightly browned.

Food value: Substitute oysters and butter from day's diet.

BAKED OR BOILED LOBSTER

Dress lobster and put in a pan and bake fifteen to twenty minutes in a hot oven, or if a broiler is at hand broil six to eight minutes on flesh side, then turn and broil on shell side for a few minutes. Remove meat and serve with one tablespoonful melted butter.

Food value: Substitute portions of butter and lobster from the diet.

NOTES

LOBSTER—NEWBURG STYLE

50 : 80 gm. lobster
10 gm. butter
f.g. salt
Dash paprika
Dash nutmeg
1 tsp. sherry
30 : 60 gm. cream
1 egg yolk

Method—Cut lobster in cubes; melt butter in saucepan; add lobster and cook for a few minutes. Then add seasoning, cream and egg yolk. Cook until thickened. Serve in a casserole.

Food value: Substitute lobster, butter, cream and egg yolk for equal portions in the diet.

FISH

BAKED HALIBUT

Weigh halibut and put in an oiled baking dish; season with salt and pepper and one teaspoonful of butter, if the diet permits. Bake for fifteen to twenty minutes. Serve with tomato sauce.

Food value: Substitute portions in the diet.

FRIED SMELTS

Clean smelts, leaving on heads and tails. Wipe dry. Season with salt and pepper and roll in Cellu or Nutrivoid flour. Fry in hot mineral oil. Garnish with parsley and a slice of lemon. Serve immediately.

Food value: Substitute portion in diet.

CREAMED SALT CODFISH

Shred codfish and soak in warm water until softened. Drain; add white sauce and heat.

Food value: Substitute portion in the diet.

NOTES

BAKED FINNAN HADDIE

Cover finnan haddie with warm water and let stand on back of stove for twenty to thirty minutes. Drain; pour melted butter over top and set in oven to brown.

Food value: Substitute portion in the diet.

FINNAN HADDIE CREAMED

Shred finnan haddie, cover with water, let stand on back of stove for twenty to thirty minutes, then heat to boiling point. Drain, add white sauce and a quarter teaspoonful finely chopped parsley. Re-heat and serve.

Food value: Substitute for equal portions in the diet.

SALMON—BAKED

30 gm. salmon (cooked)
1 tsp. lemon juice
1 egg
3 gm. butter
1 tsp. chopped parsley
Paprika
Salt and pepper

Method—Beat egg yolk; add seasoning and salmon well flaked. Beat egg white and fold into mixture. Turn into an oiled casserole and bake fifteen minutes. Garnish with a half slice lemon dipped in parsley.

Food value: P. 12 gm.; F. 11.5 gm. May be substituted for two eggs.

SALMON—SCALLOPED

40 : 60 gm. canned salmon
½ tsp. chopped dill pickle
25 gm. canned peas
½ tsp. chopped onion
60 gm. cream, 32%
Salt and pepper

Method—Weigh amount of salmon allowed in diet into casserole. Shred and add seasoning, peas and cream, and bake in a moderate oven for twenty to thirty minutes. By omitting cream soup this dish will not alter value of a diet.

N.B.—If diet calls for milk soup, milk may be substituted for cream.

NOTES

MEATS

The term "meat" includes the flesh of all animals used for food: domestic animals, game, poultry, etc. Meat is valuable chiefly as a source of protein—some meats, especially beef, mutton, fowl, furnish as well large amounts of fat, while veal and chicken contain only small amounts.

CUTS OF MEATS

The cuts of meat may be divided into two classes—tough and tender. Tough cuts come from the part of the animal used in exercise. Since connective tissue is developed by age and exercise older animals are tougher than young ones. The tougher cuts come then from the fore and hind quarters of the animal; the tender cuts from the loin.

TENDER MEATS

Tender meats are usually roasted or broiled—any tender meat may be broiled. As a rule pork and veal are not, because they should be thoroughly cooked.

ROAST MEATS

Wipe meat with a damp cloth; trim and tie or skewer in shape; dredge with salt and pepper. Place meat on rack in pan in hot oven and when meat is brown lower temperature and cook slowly until meat is done. Beef and mutton require 12 to 18 minutes a lb. Pork and veal require 20 to 30 minutes a lb.

Since the roasting of meats for a diabetic does not differ from the normal refer to any good cook book for further information and greater variety in preparation.

NOTES

PAN BROILED—CHOP OR STEAK

Heat frying pan very hot; trim off any excess fat from meat and wipe with a damp cloth. Sear meat on one side then turn and sear other; lower temperature and cook slowly until done. Six to ten minutes is required for cooking a steak and five to eight for a chop. Season with salt and pepper and serve at once.

Food value: Substitute portion allowed in diet, noting whether it is to be weighed before or after cooking.

TOUGH MEATS

So-called tough meats are generally used for pot roasts, boiling, stews, Hamburg steak, etc.

HAMBURG STEAK

40 : 60 grams round of beef
¼ tsp. salt
Dash pepper
¼ tsp. onion juice
¼ tsp. chopped parsley

Grind round of beef, add onion and chopped parsley, form into cakes and pan broil. Season with salt and pepper and serve immediately.

Food value: Substitute the portion of round of beef allowed in diet.

RECHAUFFE OF BEEF

30 grams onions
100 grams tomatoes
60 : 70 grams round of beef
10 grams butter or fat equivalent

Method—Chop onion fine and brown in fat. Add tomatoes and cook five minutes. Add the meat cubed. Cook slowly for 45-60 minutes. Season with salt and pepper. Cooked meats such as cold roast beef, veal or lamb may be substituted,

NOTES

and the time of cooking shortened to 15-20 minutes. Meats served this way add variety to the diet and are most appetising.

Food value: Substitute portion of meat and vegetable from the day's allowance.

MEAT PIE

Prepare as for Meat Stew, when cooked turn into casserole, and cover with a layer of Cellu pie crust, and bake until crust is dry.

MEAT STEW

To the amount of cubed or ground round of beef calculated in diet, add ½ cup boiling broth and let simmer till almost tender. Then add 80 grams 5% vegetables and 60 grams 10% vegetable and continue cooking till vegetables are tender. Season and serve.

Food value: Substitute portion of meat and vegetable from the day's allowance.

NEW ENGLAND BOILED DINNER

Secure a piece of corned beef, not too fat, wipe with a damp cloth, roll and tie firmly in shape. Place in a kettle with water to cover and bring to the boiling point. Lower temperature and let simmer until meat is tender—about three hours. Skim off fat and add vegetables, cabbage, turnips and carrots so that they will be done at the same time as the meat—or meat may be removed while vegetables are cooking and then re-heated with vegetables when they are done.

Food value: Use portion of corned beef, five and ten per cent. vegetables allowed in the diet.

NOTES

CURRIED MUTTON

30 grams cream
1/3 cup broth
¼ tsp. salt
¼ tsp. pepper
½ tsp. curry powder
20 : 40 grams peas
20 : 40 grams carrots
40 : 60 grams mutton

Method—Use left-over lamb or mutton, cube and add vegetables, seasoning and broth. Cook in casserole or in top of double boiler 20-30 minutes.

Food value: Use meat, vegetables and cream from the day's allowance.

BROILED BACON

Cut bacon in thin slices. Place in hot omelet pan, turn frequently, keeping fat well drained—cook until brown but not crisp.

Food value—Substitute for equal portion in diet.

BROILED HAM

Cut a slice of smoked ham one-third inch thick and remove nearly all the outside layer of fat. Soak 15 minutes in lukewarm water; drain, put in a hot omelet pan and cook 3 minutes on one side and then on the other. Drain on brown paper and serve on a hot plate.

Food value: Substitute for an equal portion of fried ham in the diet.

RECHAUFFE OF HAM

Method—Cube the allowance of boiled ham and 40-60 grams mushrooms, into a casserole, add ¼ pimento and ½ green pepper cut in strips. Pour over this 45 grams cream—if not enough to nearly cover add some broth. Place in oven or in a pan of hot water, on top of the stove, for thirty to forty minutes.

Food value: Substitute for equal portions in the diet.

NOTES

CHICKEN A LA KING

Chicken
50 : 70 grams mushrooms
India gum sauce
10 : 20 grams pimento
2/3 cup broth
60 grams cream
Salt and pepper

Method—Cube mushrooms and chicken, cook mushrooms in broth until tender, add cream, pimento—chopped fine, chicken and India gum sauce to make the desired consistency. Re-heat and serve in a casserole.

Food value: Use cream and chicken from the day's allowance.

JELLIED CHICKEN OR VEAL

3 grams gelatin
Salt and pepper
2 tb. cold water
40 : 60 grams chicken
½ cup chicken broth
30 grams celery

Method—Soak gelatin in cold water, add broth heated to boiling point. Stir until dissolved, add chicken and celery—cubed. Dip a mold in cold water and sprinkle parsley over bottom, pour in mixture. Set in cool place to harden. Serve in bed of lettuce with mineral oil dressing.

Food value: Substitute chicken and celery from the day's allowance, uisng 10 grams less meat than the diet calls for to allow for gelatin.

SWEETBREADS IN CASSEROLE

Weigh out amount of sweetbreads calculated in the diet. Soak in cold water for half an hour. Parboil twenty minutes. Remove membrane and break apart. Add an equal amount chopped cooked mushrooms. Season and turn into a casserole lined with peas (50-60 grams) and 45-60 grams cream from day's allowance. Bake in a moderate oven for 20-60 minutes. Broth may be added if desired.

Food value: Substitute portion from day's allowance.

NOTES

GRAVY

½ cup broth salt and pepper 1½ tb. India gum syrup

Method—Combine broth and India gum, add seasoning and boil for a few minutes. Strain and serve with roast meats.

DRESSING

3 tb. washed bran
80 grams 5% vegetable—cabbage, celery, twice cooked onions, etc.
1 tsp. salt ¼ tsp. pepper
½ tsp. sage ½ tsp. India gum
1 tb. Cellu or Nutrivoid flour

Method—Combine ingredients and add broth to moisten. Turn into a casserole, bake until brown.

Food value: Substitute 5% vegetable from the diet.

SUGGESTIONS

Agar in all recipes is granular and not powdered. It is more economical to buy agar in bunches and cut it, very fine, as needed.

Casseroles for individual cooking and reheating of vegetables are a great convenience. If possible secure a casserole or two that will fit into the top of the tea-kettle, so that you can steam a custard or cereal in it.

If celery is not available for chicken and other salads, use cabbage and celery salt.

When planning the day's menu use a dessert high in fat with a meat low in fat, so that you do not need to disturb the day's allowance of butter—for instance, coffee cream with roast veal or chicken, and not when having roast beef. Slice meats very thin. The portion appears larger.

NOTES

CHAPTER XVII

FOOD ANALYSES*

Amounts of protein, fat, and carbohydrate in 100 grams of various foods

*A large proportion of these analyses have been recalculated from Atwater & Bryant, Bulletin 28, U.S. Dept. of Agriculture. Other analyses are by Miss M. I. Hanna, B.A., Assistant Chemist in the Dept. of Medicine. The protein and fat content of the so-called 5% vegetables may be neglected in making diets, as they are largely unavailable for human use.

FISH	Pro.	Fat	CHO	Cal.
Bass, black, E.P., fresh	20.6	1.7		97.7
Bluefish, E.P., fresh	19.4	1.2		88.4
Clams, long, in shell	8.6	1.	2.	51.4
Cod, whole, E.P.	16.5	.4		69.6
Cod, steaks, E.P.	18.7	.5		79.3
Flounder, E.P.	14.2	.6		62.2
Haddock, E.P.	17.2	.3		71.5
Halibut, E.P.	18.6	5.2		121.2
Mackerel, salt, E.P.	18.7	7.1		138.7
Mackerel, Spanish	21.5	9.4		171.
Salmon, E.P.	22.	12.8		203.2
Smelts, raw	17.6	1.8		87.
Pike, grey, E.P.	17.9	.8		78.8
Whitefish, whole, E.P.	22.	7.		151.
Crabs, hard shell, whole, E.P.	16.6	2.	1.2	89.2
Lobster, whole, E.P.	16	1.		73.

A.P.—as purchased. E.P.—edible portion.

	Pro.	Fat	CHO	Cal.
Oyster in shell, E.P.	6.2	1.2	3.7	50.4
Oysters, solids, E.P.	6.	1.3	3.3	48.9
Scallops, A.P.	14.8	.1	3.4	73.7
Shad, whole	18.8	9.6		160.7
Trout, brook, whole	19.2	2.1		95.7
Trout, Salmon or Lake	18.	10.		162.

COOKED FISH	Pro.	Fat	CHO	Cal.
Cod and Haddock	22			88.
Bluefish, E.P.	26	4.5		144.5
Halibut, boiled	21	4.		120.
Mackerel, Spanish, broiled, E.P.	23.7	6.5		155.
Salmon, canned or boiled	20.	10.		170
Sardines	23.	20.		272
Shrimp, canned	25	1.		109
Tunney, canned, A.P.	21.5	4.1		123.
Finnan Haddie	24.3			97.

SMOKED AND DRIED	Pro.	Fat	CHO	Cal.
Cod, salt, boneless	27.3	3.		112
Herring, smoked, A.P.	20.5	8.8		161.
Herring, smoked, E.P.	37.	15.8		290.
Mackerel, salt	21.	22.6		287.
Sturgeon, dried, Russian	27.8	18.4		277.
Beef, fresh				
Beef, hindquarter, E.P., med. fat	18.3	21.6		267.6
Beef, sirloin steak, E.P.	18.9	18.5		242.1
Beef, tenderloin, A.P.	16.2	24.4		284.4
Beef, round, med. fat	20.3	13.6		203.6
Beef, ribs	17.5	26.6		292.
Beef, sweetbreads, A.P.	16.8	12.1		176.1

	Pro.	Fat	CHO	Cal.
Beef, shoulder, med. fat, E.P...	19.6	11.3		180.1
Beef Tongue, E.P.	18.9	9.2		158.
Beef Juice	4.9	.6		25.
Liver, E.P.	20.4	4.5	1.7	129.
Kidney, E.P.	16.6	4.8	.4	111.2
Beef, cooked				
Beef, roast, E.P.	23.	28.		344.
Beef, boiled	25.	23.		307.
Round steak, fat removed, A.P.	27.	8.		180.
Loin steak, sirloin	24	10.		186.
Loin steak, tenderloin, broiled, E.P.	23.	20.4		278.
Beef, canned, luncheon, A.P.....	27.6	15.9		255.5
Beef, corned and pickled				
Brisket	18.3	24.7		295.5
Beef, tongue, E.P.	18.9	9.2		158.4
Plate, E.P.	13.7	41.9		431.9
Flank, E.P.	14.6	33.		355.4
Rump, E.P.	15.3	23.3		270.9
Corned Beef, cooked	26.	19.		275.
Tongue, pickled, E.P.	12.8	20.5		235.7
Tongue, canned, whole, A.P.....	19.5	23.2		286.8
Tripe, A.P.	11.6	1.2	.2	58.4
Lamb, fresh, hind, med. fat, E.P.	19.2	16.5		225.3
Lamb, leg, hind, A.P.	16.	13.6		186.
Lamb chops, A.P., hindquarter	16.5	16.1		210.9
Lamb chops, E.P., hindquarter	19.6	19.1		250.3
Lamb loin, no tallow, or kidney, E.P.	18.7	28.3		329.5

	Pro.	Fat	CHO	Cal.
Lamb kidney	16.5	8.2		94.8
Lamb, cooked				
Lamb chop, broiled, E.P.	22.	30.		358.
Lamb chop, broiled c bone	18.4	26.7		313.
Lamb, leg, roasted	20.	13.		216.
Lamb, tongue, spiced and cooked, E.P.	13.9	17.8		215.8
Mutton, fresh, shoulder, med. fat, E.P.	17.7	20.		250.
Mutton, shoulder, lean	19.5	12.9		194.1
Mutton, leg, E.P., hindquarter, med. fat	18.5	18.1		236.
Mutton, loin, a tallow and kidney, E.P.	15.5	33.1		360.
Mutton, cooked, leg, roast	26.	22.		302.
Mutton, lean, boiled	31.	5.		169.
Mutton chop, lean	22.	5.		133.
Veal, loin chops, med. fat, E.P.	20.	10.		170.
Veal, leg cutlets, E.P.	20.	7.		143.
Veal, roasting leg, med. fat, E.P.	20.2	9.		181.8
Veal, liver	19.	5.3		123.7
Veal, roasting shoulder, med. fat, E.P.	19.7	14.4		208.4
Veal, roasting rump, fresh, E.P.	19.8	16.2		225.
Veal, cooked, roast	28.	1.		121.

Pork, fresh

	Pro.	Fat	CHO	Cal.
Chops, lean, A.P.	15.5	14.5		192.5
Chops, lean, E.P.	20.3	19.		252.2
Loin, tenderloin, A.P.	18.9	13.		192.6
Ham, visible fat largely removed	19.2	16.2		222.6
Liver, A.P.	21.	4.5	1.4	131.

Pork, cooked, fresh

Roast, lean	28.	10.		202.
Chop, lean, cooked	26.	6.		158.

Pork, smoked or cured

Ham, smoked and boiled	20.	22.		278.
Bacon, med. fat, E.P. raw	9.9	67.4		646.2
Bacon, lean, raw	15.5	42.6		445.4
Bacon, lean, cooked	15.	40.		420.

Poultry

Chicken, cooked, capon, E.P.	27.	11.5		211.5
Chicken broilers, E.P., raw	22.	2.		96.
Chicken, roast, young	25.	5.		145.
Chicken, full grown, E.P., cooked	19.	16.		220.
Squab	24.	10.		186.
Turkey, roast, E.P.	27.8	18.4		276.8

DAIRY PRODUCTS	Pro.	Fat	CHO	Cal.
Butter, A.P.	1.	85.		769.
Buttermilk, A.P.	3.	.5	4.8	35.7
Cheese, domestic	28.	38.		454.
Cheese, full cream	25.9	33.7	2.4	416.5
Cheese, Neuchatel	18.7	27.4	1.5	327.4

	Pro.	Fat	CHO	Cal.
Cheese, Cottage	20.		4.	96.
Cheese, Swiss	27.6	34.9	1.3	429.7
Cream, 16%	2.7	16.	3.8	170.
Cream, 20%	2.5	21.	3.8	214.2
Cream, 24%	2.2	24.	3.8	240.
Cream, 32%	2.	30.	3.8	293.2
Cream, 40%	1.8	39.	3.8	373.4
Eggs, uncooked, E.P.	13.4	10.5		148.1
Egg yolk, cooked	15.7	33.3		362.5
Egg white, cooked	12.3	.2		51.
Milk, whole	3.3	4.	5.	69.2
Milk, skim	3.4	.3	5.1	36.7

NUTS	Pro.	Fat	CHO	Cal.
Almonds, E.P.	21.	55.	15.	639.
Butternuts, E.P.	27.9	61.2	3.5	676.4
Brazil Nuts, E.P.	17.	67.	7.	699.
Chestnuts, fresh, E.P.	6.2	5.4	42.1	241.8
Cocoanuts	5.7	50.6	27.9	589.8
Cocoanuts, prepared, A.P.	6.3	57.4	31.5	667.8
Hickory Nuts, E.P.	15.4	67.4	11.4	713.8
Peanuts, E.P.	26.	39.	22.	543.
Peanut Butter	29.3	46.5	17.1	604.1
Pecans, E.P.	10.	70.	15.	720.
Pignolias	33.9	49.4	6.9	607.8
Walnuts, Calif., E.P.	18.4	64.4	12.	701.2

VEGETABLES	Pro.	Fat.	CHO	Cal
*Artichokes	2.6	.2	16.7	79.
Asparagus, fresh, A.P.	1.8	.2	3.3	22.2
Asparagus, canned, A.P.	1.5	.1	2.8	18.1
Beans, Lima, fresh, E.P.	7.1	.7	22.	122.7

*Carbohydrate mostly unavailable.

	Pro.	Fat	CHO	Cal.
Beans, Lima, canned, E.P.	4.	.3	14.6	77.1
Beans, string, fresh, E.P.	2.3	.3	7.4	41.5
Beans, string, canned	1.1	.1	3.8	20.5
Beets, fresh, E.P.	1.6	.1	9.7	46.1
Beets, cooked, E.P.	2.3	.1	7.4	39.7
Brussels Sprouts, canned	1.5	.1	3.4	20.5
Cabbage, E.P., large leaf	1.6	.3	5.6	31.5
Carrots, fresh, E.P.	1.1	.4	9.3	45.2
Cauliflower, E.P.	1.8	.5	4.7	30.5
Celery, E.P.	1.1	.1	3.3	18.5
Chickory			15.	60.
Corn, green, E.P.	3.1	1.1	19.7	101.1
Corn, green, canned	2.8	1.2	19.	98.
Cucumber, E.P.	.8	.2	3.1	17.4
Egg-plant, E.P.	1.2	.3	5.1	27.9
Endive, fresh, E.P.	1.		2.6	14.4
Kohl-rabi, E.P.	2.	.1	5.5	30.9
Lettuce, E.P.	1.2	.3	2.9	19.1
Lentils, dried	25.7	1.	58.	347.8
Mushrooms, A.P.	3.5	.4	6.8	44.8
Okra, E.P.	1.6	.2	7.4	37.8
Onions, E.P., raw	1.6	.3	9.9	48.7
Parsnips, E.P.	1.6	.5	13.8	64.9
Peas, green, E.P.	7.	.5	16.9	100.1
Peas, canned	3.6	.2	9.8	55.4
Peas, dried	24.6	1.	62.	355.4
Peppers, green	1.1	.1	4.6	23.7
Potatoes, A.P.	1.8	.1	14.7	66.9
Potatoes, E.P.	2.2	.1	18.4	83.3
Potatoes, sweet, E.P.	1.8	.8	27.4	124.
Potatoes, sweet, A.P.	1.4	.6	21.9	98.6
Pumpkins	1.	.1	5.2	25.7

	Pro.	Fat	CHO	Cal.
Pumpkin, canned	.8	.2	6.7	31.8
Oyster plant, Salsify	1.2	.1	7.	33.7
Radishes, E.P.	1.3	.1	5.8	29.3
Rhubarb, E.P., raw	.6	.7	3.6	23.1
Romaine				
Rutabagas	1.3	.2	8.5	41.2
Sauerkraut	1.7	.5	3.8	26.5
Soy Beans, fresh, E.P.	20.	4.3	28.	230.7
Spinach, fresh	2.1	.3	3.2	23.9
Squash, E.P.	1.4	.5	9.	46.1
Squash, canned	.9	.5	10.5	50.1
Succotash, canned	3.6	1.	18.6	97.8
Tomatoes, fresh, A.P.	.9	.4	3.9	22.8
Tomatoes, canned	1.2	.2	4.	22.6
Truffles	9.1	.5	7.	68.9
Turnips, E.P.	1.3	.2	8.1	39.4
Vegetable Marrow	.1	.2	2.6	12.6
Watercress	.7	.5	3.7	22.1

FRESH FRUITS	Pro.	Fat	CHO	Cal.
Apple, E.P.	.4	.5	14.2	62.9
Apple, A.P.	.3	.3	10.8	47.1
Apricots, E.P.	1.1		13.4	58.
Bananas, yellow, E.P.	1.3	5.	20.	85.
Bananas, red	1.2	.7	17.5	81.1
Blackberries, A.P.	1.3	1.	10.9	57.8
Cherries, E.P.	1.	.8	16.7	78.
Cherries, A.P.	.9	.8	15.9	74.4
Cranberries, A.P.	.4	.6	9.9	46.6
Currants, fresh, A.P.	1.5		12.8	57.2
Figs, fresh, A.P.	1.5		18.8	81.2

	Pro.	Fat	CHO	Cal.
Gooseberries	1.		13.1	56.4
Grapes, A.P.	1.	1.2	14.4	72.4
Grapefruit Juice	—	—	12.	48.
Grapefruit, E.P.	—	—	7.	28.
Huckleberries, E.P.	.6	.1	16.6	74.2
Lemon, A.P.	.7	.5	5.9	30.9
Lemon juice			9.8	39.2
Mangos			13.	52.
Mulberries	.3		12.	49.2
Muskmelons, E.P.	.6		9.3	39.6
Nectarines, E.P.	.6		15.9	66.
Oranges, E.P.	.8	.2	11.6	51.4
Oranges, A.P.	.6	.1	8.5	37.3
Peaches, E.P.	.7	.1	9.4	41.3
Peaches, A.P.	.5	.1	7.7	33.7
Pears, E.P.	.6	.5	14.1	53.3
Persimmons, E.P.	.8	.7	31.5	135.5
Pineapple, E.P.	.4	.3	9.7	43.1
Plums, A.P.	.9		19.1	80.
Prunes, A.P.	.7		17.4	72.4
Quince	.3	.1	13.1	54.
Raspberries, red, A.P.	1.		12.6	54.4
Raspberries, black, E.P.	1.7	1.	12.6	66.2
Strawberries, E.P.	1.	.6	7.4	39.
Watermelon, E.P.	.4	.2	6.7	30.2
Whortleberries, A.P.	.7	3.	13.4	59.5
Fruit, canned, preserves, etc.				
Apple sauce	.2	.8	37.2	156.8
Apricots, canned	.9		17.3	72.8
Blackberries, canned	.8	2.1	56.4	247.7
Cherries, canned	1.1	.1	21.1	89.7

	Pro.	Fat	CHO	Cal.
Cherries, candied	.5	.2	86.6	350.2
Figs, stewed	1.2	.3	40.9	171.1
Olives, green, pickled, A.P.	.8	20.2	8.5	219.
Olives, ripe, pickled, E.P.	1.7	25.9	4.3	257.1
Olives, ripe, pickled, A.P.	1.4	21.	3.5	208.6
Orange Marmalade	.6	.1	84.5	341.3
Peaches, canned	.7	.1	10.8	46.9
Pears, canned	.3	.3	18.	75.9
Pineapple, canned	.4	.7	36.4	153.5
Prunes, stewed	.5	.1	22.3	92.1
Strawberries, stewed	.7		24.	98.8
Fruits, dried				
Apricots	4.7	1.	62.5	277.8
Citrons	.5	1.5	78.1	327.9
Currants	2.4	1.7	78.1	321.7
Dates, E.P.	2.1	2.8	78.4	347.2
Figs, pulled	4.3	.3	74.2	316.7
Prunes	2.1		73.3	301.6
Raisins	2.6	3.3	76.1	344.5
Fruit products				
Olive Oil		100.		900.
Raspberry Juice	.5		49.9	201.6
Unfermented Grapejuice	.2	.5	6.9	32.9
Cider Vinegar			.25	1.

SUGARS AND STARCH	Pro.	Fat	CHO	Cal.
Honey, A.P.	.4		81.2	326.4
Molasses Cane, A.P.	2.4		69.3	286.8
Cornstarch			90.	360.
Wheat flour, patent	11.4	1.	75.	355.
Tapioca, A.P.	.4	.1	88.	354.

	Pro.	Fat	CHO	Cal.
Sago, A.P.	9.	.4	78.1	352.
Sugar, brown			95.	380.
Sugar, granulated			100.	400.
Sugar, maple			82.8	331.2
Syrup, maple			71.4	285.6
Flours				
Hepco flour	43.	21.	1.	365.
Soy bean flour, San Francisco Flour Co.	43.	16.	.5	318.
Allenbury's Diabetic Flour	67.	7.		331.
Diaprotein flour	83.	4.		368.
Gluten flour, Farwell and Rhines, Watertown, N.Y.	46.	1.1	43.	366.
Lister's self rising	68.3	1.	9.7	321.
Lister's Casein flour	69.9	.67		286.
Nutrivoid flour	5.2	11.3	5.2	143.
Soy bean meal, Hancock's	38.8	20.5	11.6	38.6
Jireh diabetic flour	14.	2.2	71.6	322.
Patent flour	13.3	1.5	72.7	357.
Flour, whole wheat	13.8	1.9	71.9	360.
Diaban flour	25.	25.	16.	389.
Cereal and Bread				
Cornflakes	5.5	1.5	81.	359.5
Farina, dry	11.	1.4	76.3	361.8
Hominy, cooked	2.2	.2	17.8	81.8
Grapenuts	11.5	.6	75.	351.4
Macaroni, A.P.	13.4	.9	74.1	358.1
Macaroni cooked	3.	.1	15.8	76.1
Oatmeal, dry	16.1	7.2	67.5	399.2
Oatmeal, boiled	2.8	.5	11.5	61.

	Pro.	Fat	CHO	Cal
Puffed Rice	6.7	.4	80.	350.4
Rice, A.P.	8.	.3	79.	350.7
Rice, boiled	2.8	.1	24.4	109.7
Rolled Oats, dry	16.	7.	66.2	397.3
Rolled Oats, cooked	2.8	.5	11.5	61.7
Shredded Wheat	12.1	1.8	75.2	365.4
Bread, white	9.		55.	
Bread, whole wheat	9.7	.9	49.7	245.7
Crackers, graham, A.P.	10.	9.4	73.8	419.8
Saltines, A.P.	10.6	12.7	68.5	430.7
Soda Crackers, A.P.	9.8	9.1	73.1	413.5
Zwiebach	9.8	9.9	73.5	422.3

Miscellaneous	Pro.	Fat	CHO	Cal.
Chocolate, A.P., bitter	12.9	48.7	30.3	611.1
Chocolate, milk			51.	204.
Chocolate, sweet			67.	268.
Cocoa, A.P.	21.6	28.9	37.7	497.3
Baking Powder			32.	128.

Pickles and condiments	Pro.	Fat.	CHO	Cal.
Cucumber pickles	.5	.3	2.7	15.5
Capers	3.2	.5	5.	37.3
Catsup, tomato, A.P.	1.5	.2	12.3	57.
Horseradish	1.4	.2	10.5	49.4

SPECIAL ANALYSES*

	P.	F.	C.
Apples, greenings, raw	....	....	10.6
Apples, greenings, cooked, drained	....	....	7.5
Apricots, cooked	....	....	11.7
Blueberries, canned in water:			
Fruit	....	....	9.
Liquid	....	....	7.
Cherries, canned in water:			
Fruit	....	....	13.3
Liquid	....	....	13.5
Peaches, canned in water:			
Fruit	....	....	5.4
Liquid	....	....	6.3
Peaches, dried, cooked (see recipe)	....	....	7.
Pears, canned in water:			
Fruit	....	....	10.8
Liquid	....	....	10.1
Prunes, dried, cooked (see recipe)	....	....	9.4
Quince, stewed:			
Fruit	....	....	5.2
Liquid	....	....	5.
Quince honey (see recipe)	....	....	5.1
Quince marmalade (see recipe)	....	....	6.5
Raspberries, canned in water:			
Fruit	....	....	8.
Liquid	....	....	8.6

*Protein and fat analyses are omitted as they are of no significance.

SPECIAL ANALYSES

Food	P.	F.	C.	Cal. per 100 gms.

CHAPTER XVIII

HOME CANNING AND SUPPLIES

If possible, every diabetic should can some fruits and vegetables for winter consumption. It adds greatly to the attractiveness and palatability of the diet to have these out-of-season foods. Fruits, vegetables and meats may be safely and easily canned by the cold pack method—where instructions are carried out there need be no loss from spoilage. Greater care is needed when canning without sugar, because sugar itself is a preservative, and without it one is entirely dependent on sterilization.

In canning by the cold pack method all the vegetables and most of the fruits are given a short cooking or scalding, called blanching, then plunged into cold water once or twice, preparation finished, then carefully packed into jars and partially sealed. The jars are put in the hot water bath and boiled to cook and sterilize, this final step is called processing—the time varies for different products.

The Hot Water Bath—The simplest kind of equipment may be used satisfactorily if one does not wish to buy a commercial outfit. A wash boiler, or a lard can with a tight fitting cover, will serve the purpose very well. It will need to be provided with a false bottom—to raise the jars from the bottom of the vessel and permit free circulation of the water. Strips of lath cut to fit and tacked together may be used. Commercial types of false bottoms are provided with wire handles for lifting the jars from the water bath; if one has a wooden rack, without handles, a duplex fork may be used for lifting the jars, but one should be careful to get a firm grip on the jar when removing from the bath.

NOTES

CANNING DIRECTIONS

1. Have all equipment ready.
2. Test jars for leaks.
3. Use new rubber rings, test by folding—good rings should not break or crack.
4. Can product as soon after gathering as possible.
5. Have fruits or vegetables carefully washed.
6. To blanch product tie in a square of thin muslin and plunge into boiling water for the required time, using three to four times as much water as fruit. To blanch in steam place product in colanders over boiling water.

Reason for Blanching

(1) To remove skin from such products as tomatoes, peaches, etc.

(2) To shrink the product so that more can be packed in jar.

(3) To remove strong flavours.

(4) To set the colour.

7. Cold Dip:—Plunge the product into cold water once or twice, but do not allow it to remain in the cold water, this hardens the product and sets the colour.
8. Pack immediately into jars which have been heating in a pan of boiling water, then add the salt to the vegetables (one teaspoonful to each quart) and water to within one-half inch of top of jar—run a knife down the sides of the jar to let out the air bubbles—wipe top of jar, dip the rubber ring in boiling water, adjust on jar, and partially seal.
9. Place the jar in hot water bath for the required length of time—the water should be two inches over the top of

NOTES

the jar; water should be added if necessary during period of processing.

10. Count time of processing from the time water starts boiling and after the last jar is placed in the bath. When time of processing is up remove jars and seal. If, for any reason the top has to be lifted jar must be re-processed. After sealing, jars may be inverted, to test for leaks, but do not re-tighten lids, as this will break the seal.

CAUTIONS WHEN OPENING CANNED FOODS

Examine cans for any leaks. If tin, both ends of can should be flat or curved inward, not bulged. When opening cans a sputting of air, most likely, denotes spoilage, and contents should not be used. The inside of tin cans should be bright and not corroded. Note odor, it should be that of the natural product, and contents should be in good condition, the liquid not unusually cloudy.

Before using canned asparagus, corn, string beans, and spinach, boil for five minutes and again note odor, as heat tends to bring out any odors due to spoilage.

SCHEDULE FOR CANNING

FRUITS and VEGETABLES	PREPARATION	BOILING WATER	TIME OF PROCESSING IN HOT WATER BATH
Soft Fruits and Berries	Wash, hull and pack in jars	Fill jar with boiling water to within ½" of top	
Black Blueberries			16 minutes
Blueberries	.....		
Dewberries	Blanch by dipping in boiling water once or twice		16 minutes
Raspberries			
Cherries			
.....			
Apricots	Cut Rhubarb in ½-inch lengths.		
Peaches			
Plums			
Rhubarb			
Hard Fruits	Peel, core, cut in halves or slices. Blanch ½ min. Do not blanch Pineapple. Cold dip.	Fill jar with boiling water to within ½" of top.	20 minutes
Apples			
Pears			
Quinces			Pineapple, 30 minutes
Pineapple			
Green Vegetables	Blanch in steam 15 min. Cold dip. Break Cauliflower in convenient sections. Blanch Peppers and Cauliflower in steam only 3 minutes. Cold dip.	Add one level teaspoon salt to quart and fill jar to within half inch of top.	2 hours
Asparagus			
Spinach			
Beet tops or any greens			
Cauliflower			
Green Peppers			1 hour
			2 hours

SCHEDULE FOR CANNING

FRUITS and VEGETABLES	PREPARATION	BOILING WATER	TIME OF PROCESSING IN HOT WATER BATH
Legumes Lima Beans Peas String Beans	Hull and string. Blanch 5-10 min. Pack whole	Add one level teaspoon salt to quart, and boiling water to within ½" of top.	 3 hours 2 hours
VEGETABLES and POULTRY *Roots* Beets Carrots Turnips Salsify	Blanch 5 min. Cold dip. Remove skins. Pack whole or cut in sections.	Add one level teaspoon salt to quart, and boiling water to within ½" of top.	90 minutes
Pumpkin Squash Vegetable Marrow Tomatoes	Skin, core. Blanch 3 min. Cold dip, pack whole or in sections	Add one level teaspoon salt to quart, and boiling water to within ½" of top.	2 hours Tomatoes, 20 minutes
Poultry Beef Pork Mutton Veal Sausage	Cut in portions, season, and cook in shallow fat or roast until nearly done. Pack closely.	Pour the hot liquid over the meat.	3 hours

NOTES

SUPPLIES

Special supplies are required to a greater or less extent by all diabetic patients except those of the mildest degree of severity. Often the physician will be able to inform his patients as to the most satisfactory source for obtaining these. Local druggists or grocers will arrange to carry suitable stocks. Where such facilities do not exist, however, the patient will do well to establish a regular source of supply for his various requirements either near his place of residence or through some reliable supply house. The diabetic patient must be warned, however, that he will encounter dealers who do not hesitate to recommend foods which are actually poisonous to him and even more often the well meaning friend who recommends this or that food because of what it did for Mrs. X. Ask your doctor—do not trust the analysis, if any, on the label.

The following list of makers and dealers by no means exhausts the list of reputable houses furnishing the supplies mentioned, but is published in order that patients may have an opportunity to obtain the necessary adjuncts to satisfactory treatment with as little difficulty as possible. Some of these firms do not sell direct to the consumer but will place your order in the hands of your nearest dealer for execution. Care should be exercised to order supplies early, allowing more than adequate time for delivery.

INSULIN through local druggists or

Eli Lilly and Co., Indianapolis, Ind.
H. K. Mulford Co., Philadelphia, Pa.
E. R. Squibb and Sons, New York.
Frederick Stearns and Co., Detroit, Mich.

SYRINGES, NEEDLES through local druggists and physicians' supply houses

Beeton, Dickenson and Co., Rutherford, N.J.
Eli Lilly and Co., Indianapolis, Ind.
Chicago Dietetic Supply House, 1750 W. VanBuren St., Chicago, Ill.

SCALES

Chatillon and Co., 85 Cliff St., New York City.
Hanson Bros. Scale Co., 519 N. Ada St., Chicago, Ill.
Pelouze Manufacturing Co., 232 E. Ohio St., Chicago, Ill.

CHEMICALS

Benedict's solution, Ferric chloride solution, Rubbing alcohol, Saccharine, through the local druggist or physician's supply house.

FLOURS (CASEIN)

Allenbury's. The Allen & Hanburys Co., 90-92 Beekman St., New York.
Lister Bros. Inc., 405 Lexington Ave., New York.
The Diaprotein Co., Columbus, Ohio.
Cellu Casein, Chicago Dietetic Supply House, 1750 W. VanBuren St., Chicago.

FLOURS (GLUTEN)

Farwell and Rhines, Watertown, N.Y.
Pure Gluten Food Co., Columbus, Ohio.

FLOURS (SOY BEAN)

Waukesha Health Products Co., 3 Riverside Drive, Waukesha, Wis.

FLOURS (OTHER NUTRITIVE)

Diaban Flour, MacDowell Bros., Ogdensburg, N.Y.

FLOURS (NON-NUTRIENT)

Cellu, Chicago Dietetic Supply House, 1750 W. VanBuren St., Chicago.

Nutrivoid, Nutrivoid Flour Co., 483 Rogers Ave., Brooklyn, N.Y.

D'ZERTA

The Jello Company, LeRoy, N.Y.

CANNED FRUITS

W. N. Clark Co., Rochester, N.Y.

John Sexton & Co., P.O. Box H.H., Chicago.

Chicago Dietetic Supply House, 1750 W. VanBuren St., Chicago.

FLAVORINGS, COLORINGS

India gum, Agar, Mineral oil from the local druggist or physicians' supply house or Chicago Dietetic House, 1750 W. VanBuren St., Chicago.

NOTES

Date..... MAINTENANCE DIET

℞ P.....F.....C.....gms. Daily Cream Allowance.....gms.

Meal P.....F.....C.....gms. Daily Butter Allowance.....gms.

Breakfast

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

NOTES

Dinner or lunch Meal Allowance P.....F.....C.....gms.

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Previous meal ————————————————

Total

NOTES

Supper or Dinner Meal Allowance P.....F.....C.....gms.

Food.....Amount.....P.....F.....C.....Cal.....

Subtotal for meal P.....F.....C.....Cal.....

Previous meals _____

Total

NOTES

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